

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2002-055864

(43)Date of publication of application : 20.02.2002

(51)Int.Cl. G06F 12/00
G06F 15/02

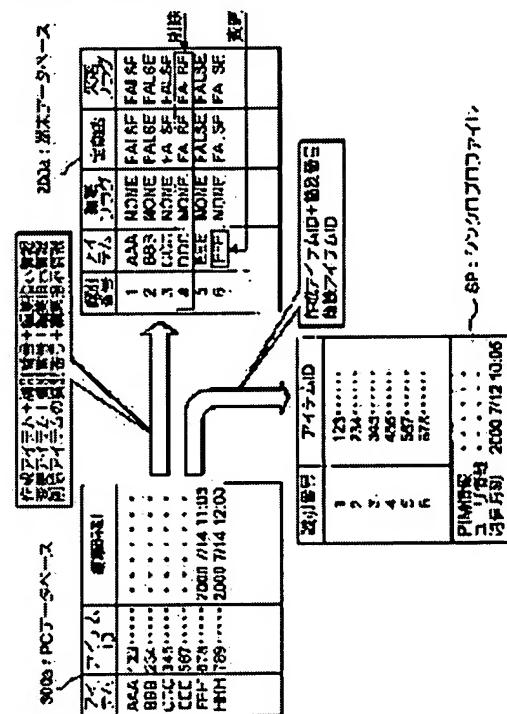
(21)Application number : 2000-241687 (71)Applicant : SEIKO EPSON CORP
(22)Date of filing : 09.08.2000 (72)Inventor : HAYAKAWA MOTOMU
NEHASHI ISAO
KAI MASARU

(54) DATA UPDATING METHOD AND INFORMATION PROCESSOR

(57)Abstract:

PROBLEM TO BE SOLVED: To suppress troublesomeness of data update processing of application data shared by data bases between two information processors.

SOLUTION: When the editing contents of the application data stored into a PC data base 300a executed on the PC side are to be reflected on a terminal data base 200a on the side of a portable information terminal, an item edited after completion of the previous data update is detected by a PC by referring to a synchronous profile SP in which an item ID, an identification number and communication time information at the time of the previous data update are stored.



LEGAL STATUS

[Date of request for examination] 20.11.2003

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or

application converted registration]

[Date of final disposal for application]

[Patent number] 3750504

[Date of registration] 16.12.2005

[Number of appeal against examiner's
decision of rejection]

[Date of requesting appeal against examiner's
decision of rejection]

[Date of extinction of right]

* NOTICES *

JPO and INPIT are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] It is the device which shares between each database the application data which consists of 1 created by predetermined application, or two or more predetermined unit data. Data communication is performed between the information management systems in which edits, such as creation of the application data concerned, modification, and deletion, are possible. If it is the renewal approach of data which updates said application data which was memorized by said mutual database, and to share and the communication link between said information management systems is started It is the file for updating memorized at the information management system [one of] side. The file for updating which stored the identification number information which identifies said predetermined unit data contained in said application data in the time of the last communication link being completed to share, and the communication link time information which shows the last communication link time of day, The identification number information which identifies said predetermined unit data contained in said application data at this communication link initiation time with which while was memorized by said database of an information management system, and to share, And by referring to the edit time information which shows the newest edit activation day for said every predetermined unit data While detecting the predetermined unit data created or changed after the time of the last communication link termination out of said predetermined unit data contained in said application data which was memorized by the database of one [said] information management system, and to share The identification number of the predetermined unit data deleted after the time of the last communication link termination is detected. After updating said database of the information management system of another side based on the detection result concerned, The renewal approach of data by which it is updating-based on contents and this communication link time of day of said database after updating memorized by one [said] information management system-communication link time information which shows identification number information and communication link time of day which are stored in said file for updating characterized.

[Claim 2] It is the device which shares between each database the application data which consists of 1 created by predetermined application, or two or more predetermined unit data. Data communication is performed between the information management systems in which edits, such as creation of the application data concerned, modification, and deletion, are possible. If it is the renewal approach of data which updates said application data which was memorized by said mutual database, and to share and the communication link between said information management systems is started It is the file for updating memorized at said information management system [one of] side. The file for updating which stored the identification number information which identifies said predetermined unit data contained in said application data in the time of the last communication link being completed to share, and the communication link time information which shows the last communication link time of day, The identification number information which identifies said predetermined unit data contained in said application data which was memorized by said database of one [said] information management system at this communication link initiation time, and to share, And by referring to the edit time information which shows the newest edit activation day for said every predetermined unit data While detecting the predetermined unit data created or changed after the time of the last communication link termination out of said predetermined unit data contained in said application data which was memorized by the database of one [said] information management

system, and to share The identification number of the predetermined unit data deleted after the time of the last communication link termination is detected. Based on the detection result concerned, said database of the information management system of another side is updated. The identification number information which identifies said predetermined unit data contained in said application data which was memorized by said database of the information management system of said another side at this communication link initiation time, and to share, In the information management system of said another side, predetermined unit data create after the time of communication link termination last time. By referring to the edit flag information which shows the thing which are matched with the predetermined unit data concerned and memorized, and which was created, changed or deleted, when changed or deleted While detecting the predetermined unit data created or changed after the time of the last communication link termination out of said predetermined unit data contained in said application data which was memorized by the database of one [said] information management system, and to share The identification number of the predetermined unit data deleted after the time of the last communication link termination is detected. After updating said database of one [said] information management system based on the detection result concerned, The renewal approach of data characterized by updating the communication link time information which shows the identification number information and communication link time of day which are stored in said file for updating based on the contents and this communication link time of day of said database after updating memorized by one [said] information management system.

[Claim 3] The information management system of said another side is the renewal approach of data according to claim 1 or 2 characterized by being a pocket mold information management system.

[Claim 4] The inside of said predetermined unit data contained in said application data which it is at this communication link time, and was memorized by the database of one [said] information management system, and to share, The predetermined unit data after the time of day when the time of day which the same identification number is stored in said file for updating, and is shown in said edit time information is shown in said communication link time information The inside of said predetermined unit data contained in said application data which it will distinguish if changed after the time of the last communication link termination, and is at this communication link time, and was memorized by the database of one [said] information management system, and to share, The predetermined unit data of the identification number which is not stored in said file for updating Will distinguish, if created after the time of the last communication link termination, and the identification number information stored in said file for updating is referred to- When there are identification numbers other than the identification number of said predetermined unit data contained in said application data which it is at this communication link initiation time, and was memorized by the database of one [said] information management system, and to share The renewal approach of data according to claim 1 to 3 characterized by distinguishing the predetermined unit data identified with the identification number concerned if deleted after the time of the last communication link termination.

[Claim 5] Having been changed last time in one [said] information management system and the information management system of said another side after the time of communication link termination the detected predetermined unit data Transmit to the information management system of the other party, and the predetermined unit data concerned which transmitted are overwritten at the predetermined unit data identified with the same identification number as the transmitted predetermined unit data in said database of the other party. Having been created last time in one [said] information management system and the information management system of said another side after the time of communication link termination the detected predetermined unit data Transmit to the information management system of the other party, and it newly writes in said database of the other party. Having been deleted last time in one [said] information management system and the information management system of said another side after the time of communication link termination the identification number of the detected predetermined unit data The renewal approach of data according to claim 1 to 4 characterized by deleting the predetermined unit data identified with the transmitted identification number which transmitted to the information management system of the other party, and was memorized by said database of the other party.

[Claim 6] The predetermined unit data created last time in the information management system of said another side after the time of communication link termination In case it transmits to one [said]

information management system and writes in said database The identification number which gave the identification number and was given to the predetermined unit data to write in is transmitted to the information management system of said another side. The renewal approach of data according to claim 5 characterized by relating the identification number given to said database in the information management system of said another side with the predetermined unit data created last time after the time of communication link termination, and memorizing it.

[Claim 7] The renewal approach of data according to claim 1 to 6 characterized by transmitting said file for updating after updating memorized by one [said] information management system to the information management system of said another side, and the information management system of said another side memorizing said file for updating after transmitted updating.

[Claim 8] It is the device which shares between each database the application data which consists of 1 created by predetermined application, or two or more predetermined unit data. Data communication is performed between the information management systems in which edits, such as creation of the application data concerned, modification, and deletion, are possible. It is the renewal approach of data which updates said application data which was memorized by said mutual database, and to share. The identification number information which identifies said predetermined unit data contained in said application data at this communication link initiation time with which while was memorized by said database of an information management system, and to share, In one [said] information management system, predetermined unit data create after the time of communication link termination last time. By referring to the edit flag information which shows the thing which are matched with the predetermined unit data concerned and memorized, and which was created, changed or deleted, when changed or deleted While detecting the predetermined unit data created or changed after the time of the last communication link termination out of said predetermined unit data contained in said application data which was memorized by the database of one [said] information management system, and to share The renewal approach of data characterized by detecting the identification number of the predetermined unit data deleted after the time of the last communication link termination, and updating said database of the information management system of another side based on the detection result concerned.

[Claim 9] One [said] information management system is the renewal approach of data according to claim 8 characterized by being a pocket mold information management system.

[Claim 10] Having been changed last time in one [said] information management system and the information management system of said another side after the time of communication link termination the detected predetermined unit data Transmit to the information management system of the other party, and the predetermined unit data concerned which transmitted are overwritten at the predetermined unit data identified with the same identification number as the transmitted predetermined unit data in said database of the other party. Having been created last time in one [said] information management system and the information management system of said another side after the time of communication link termination the detected predetermined unit data Transmit to the information management system of the other party, and it newly writes in said database of the other party. Having been deleted last time in one [said] information management system and the information management system of said another side after the time of communication link termination the identification number of the detected predetermined unit data The renewal approach of data according to claim 8 or 9 characterized by deleting the predetermined unit data identified with the transmitted identification number which transmitted to the information management system of the other party, and was memorized by said database of the other party.

[Claim 11] The renewal approach of data according to claim 1 to 10 characterized by updating the contents of record of said mutual database when the communication link of one [said] information management system and the information management system of said another side was started and the memorized mutual updating authorization information is [the updating authorization information which both have memorized beforehand is compared and] in agreement.

[Claim 12] When said application data to share is data related with time, It is predetermined unit data contained in said application data which was memorized by said database of one [said] information management system at the time of this communication link initiation, and to share. And while detecting the predetermined unit data created or changed after the time of the last communication link termination out of the predetermined unit data with which the date within the period set up

beforehand is associated The renewal approach of data according to claim 1 to 11 characterized by detecting the identification number of the predetermined unit data deleted after the time of the last communication link termination.

[Claim 13] Said one predetermined unit data consists of two or more 2nd predetermined unit data. When said number of the 2nd predetermined unit data which said a certain predetermined unit data memorized by each database of said two information management systems which communicates contain changes with differences in the function of said application performed with each aforementioned information management system Said predetermined unit data containing the 2nd predetermined unit data with many numbers concerned in said database of said information management system of the direction with many said 2nd predetermined unit data When updating based on said predetermined unit data memorized by said database of said information management system of little direction, The renewal approach of data according to claim 1 to 12 characterized by deleting said 2nd predetermined unit data which is not memorized by said information management system of little direction in the database of said information management system of more ones.

[Claim 14] Said one predetermined unit data consists of two or more 2nd predetermined unit data. When said maximum amounts of data of the 2nd predetermined unit data memorizable in said database in each aforementioned information management system differ The amount of data of said a certain 2nd predetermined unit data with which the maximum amount of data of said 2nd predetermined unit data was memorized by said database of said information management system of a large side When the maximum amount of data is larger than the maximum amount of data of said 2nd predetermined unit data by the side of said few information management systems At the time of the renewal of data of the mutual database between said information management systems The renewal approach of data according to claim 1 to 13 characterized by deleting the amount of data said maximum amount of data was remembered to be by said database of said large information management system in said 2nd large predetermined unit data.

[Claim 15] They are two or more information management systems which share the database which stored the application data which consists of 1 which was connected to the network and created by predetermined application, or two or more predetermined unit data. Either of two or more information management systems in which edits, such as creation of the application data with which each was stored in said database to share, modification, and deletion, are possible, It is the pocket mold information management system which shares between a self database two or more information management systems and said application datas to share concerned. In case data communication is performed between the pocket mold information management systems in which edits, such as creation of the application data concerned, modification, and deletion, are possible If it is the renewal approach of data which updates said application data which was memorized by said mutual database, and to share and the communication link between said information management system and said pocket mold information management system is started It is the file for updating memorized by said pocket mold information management system. The file for updating which stored the identification number information which identifies said predetermined unit data contained in said application data in the time of the last communication link being completed to share, and the communication link time information which shows the last communication link time of day, The identification number information which identifies said predetermined unit data contained in said application data which was memorized by said database of said information management system at this communication link initiation time, and to share, And by referring to the edit time information which shows the newest edit activation day for said every predetermined unit data While detecting the predetermined unit data created or changed after the time of the last communication link termination out of said predetermined unit data contained in said application data which was memorized by the database of said information management system, and to share The identification number of the predetermined unit data deleted after the time of the last communication link termination is detected. Based on the detection result concerned, said database of said pocket mold information management system is updated. The identification number information which identifies said predetermined unit data contained in said application data which was memorized by said database of said pocket mold information management system at this communication link initiation time, and to share, In said pocket mold information management system, predetermined unit data create after the time of communication link termination last time. By referring to the edit flag

information which shows the thing which are matched with the predetermined unit data concerned and memorized, and which was created, changed or deleted, when changed or deleted While detecting the predetermined unit data created or changed after the time of the last communication link termination out of said predetermined unit data contained in said application data which was memorized by the database of said information management system, and to share The identification number of the predetermined unit data deleted after the time of the last communication link termination is detected. After updating said database of said information management system based on the detection result concerned, The renewal approach of data characterized by updating the communication link time information which shows the identification number information and communication link time of day which are stored in said file for updating based on the contents and this communication link time of day of said database after updating memorized by said pocket mold information management system.

[Claim 16] The inside of said predetermined unit data contained in said application data which it is at this communication link time, and was memorized by the database of said information management system, and to share, The predetermined unit data after the time of day when the time of day which the same identification number is stored in said file for updating, and is shown in said edit time information is shown in said communication link time information The inside of said predetermined unit data contained in said application data which it will distinguish if changed after the time of the last communication link termination, and is at this communication link time, and was memorized by the database of said information management system, and to share, The predetermined unit data of the identification number which is not stored in said file for updating Will distinguish, if created after the time of the last communication link termination, and the identification number information stored in said file for updating is referred to. When there are identification numbers other than the identification number of said predetermined unit data contained in said application data which it is at this communication link initiation time, and was memorized by the database of said information management system, and to share The renewal approach of data according to claim 15 characterized by distinguishing the predetermined unit data identified with the identification number concerned if deleted after the time of the last communication link termination.

[Claim 17] Having been changed last time in said information management system and said pocket mold information management system after the time of communication link termination the detected predetermined unit data Transmit to the information management system of the other party, and the predetermined unit data concerned which transmitted are overwritten at the predetermined unit data identified with the same identification number as the transmitted predetermined unit data in said database of the other party. Having been created last time in said information management system and said pocket mold information management system after the time of communication link termination the detected predetermined unit data Transmit to the information management system of the other party, and it writes in said database of the other party. Having been deleted last time in said information management system and said pocket mold information management system after the time of communication link termination the identification number of the detected predetermined unit data The renewal approach of data according to claim 15 or 16 characterized by deleting the predetermined unit data identified with the transmitted identification number which transmitted to the information management system of the other party, and was memorized by said database of the other party.

[Claim 18] The application data which consists of 1 created by predetermined application, or two or more predetermined unit data While sharing with other information management systems in which edits, such as creation of the application data concerned, modification, and deletion, are possible It is the information processor in which edits, such as creation of the application data concerned, modification, and deletion, are possible. The identification number information which identifies said application data to share and said predetermined unit data contained in said application data to share, And the database which memorizes the edit time information which shows the newest edit activation day for said every predetermined unit data, It has a renewal means of data to update said application data which was memorized by the database of an information management system and to share. said -- others -- the time of performing data communication between information management systems -- said database -- and -- said -- others -- The identification number information which identifies said predetermined unit data contained in said application data in the time of the last communication link

ending said renewal means of data to share, and the file for updating which stored the communication link time information which shows the last communication link time of day -- having -- **** -- said -- others, if a communication link is started between information management systems By referring to the identification number information and edit time information which were remembered to be the file for updating concerned by said database of self-equipment While detecting the predetermined unit data created or changed after the time of the last communication link termination out of said predetermined unit data contained in said application data which was memorized by said database of self-equipment, and to share The identification number of the predetermined unit data deleted after the time of the last communication link termination is detected. After controlling updating for the database of an information management system besides the above based on the detection result concerned, The information processor by which it is updating [the communication link time information which shows the identification number information and communication link time of day which are stored in said file for updating]-based on contents and this communication link time of day of said database after updating characterized.

[Claim 19] Creation [set to an information management system and] of said predetermined unit data said -- others -- the time of an information management system and a communication link -- last time -- the time of communication link termination or subsequent ones -- said -- others -- When the edit flag information which shows having been changed or deleted is transmitted Said renewal means of data by referring to the transmitted edit flag information concerned said -- others, while detecting the predetermined unit data created or changed after the time of the last communication link termination out of said predetermined unit data contained in said application data which was memorized by the database of an information management system, and to share The information processor according to claim 18 characterized by detecting the identification number of the predetermined unit data deleted after the time of the last communication link termination, and updating said database of self-equipment based on the detection result concerned.

[Claim 20] The inside of said predetermined unit data contained in said application data which it is said renewal means of data at this communication link time, and was memorized by said database of self-equipment, and to share, The predetermined unit data after the time of day when the time of day which the same identification number is stored in said file for updating, and is shown in said edit time information is shown in said communication link time information The inside of said predetermined unit data contained in said application data which it will distinguish if changed after the time of the last communication link termination, and is at this communication link time, and was memorized by said database of self-equipment, and to share, The predetermined unit data of the identification number which is not stored in said file for updating Will distinguish, if created after the time of the last communication link termination, and the identification number information stored in said file for updating is referred to. When there are identification numbers other than the identification number of said predetermined unit data contained in said application data which it is at this communication link initiation time, and was memorized by said database of self-equipment, and to share The information processor according to claim 18 or 19 characterized by distinguishing the predetermined unit data identified with the identification number concerned if deleted after the time of the last communication link termination.

[Claim 21] That said renewal means of data was changed last time in said database of self-equipment after the time of communication link termination the detected predetermined unit data said -- others - - an information management system -- transmitting -- said -- others, while directing to overwrite the predetermined unit data concerned which transmitted to the predetermined unit data identified with the same identification number as the transmitted predetermined unit data in said database of an information management system said -- others -- having been changed last time in said database of an information management system after the time of communication link termination the detected predetermined unit data Receive from an information management system besides the above, and the predetermined unit data concerned which received are overwritten at the predetermined unit data identified with the same identification number as the received predetermined unit data in said database of self-equipment. While having been created last time in said database of self-equipment after the time of communication link termination transmits the detected predetermined unit data to an information management system besides the above and it directs the writing to said database of an information management system besides the above said -- others -- having been created last time in

said database of an information management system after the time of communication link termination the detected predetermined unit data Receive from an information management system besides the above, and it writes in said database of self-equipment. Having been deleted last time in said database of self-equipment after the time of communication link termination the identification number of the detected predetermined unit data said -- others -- an information management system - - transmitting -- said -- others, while directing to delete the predetermined unit data identified with the transmitted identification number which was memorized by said database of an information management system said -- others -- having been deleted last time in said database of an information processor after the time of communication link termination the identification number of the detected predetermined unit data The information processor according to claim 18 to 20 characterized by deleting the predetermined unit data identified with the received identification number which received from the information management system besides the above, and was memorized by said database of self-equipment.

[Claim 22] Said renewal means of data the predetermined unit data created last time in said database of an information management system besides the above after the time of communication link termination In case it receives from an information management system besides the above and writes in said database of self-equipment The identification number which gave the identification number and was given to the predetermined unit data to write in is transmitted to an information management system besides the above. said -- others -- the information processor according to claim 21 characterized by directing to relate the identification number given to said database in an information management system with the predetermined unit data created last time after the time of communication link termination, and to memorize it.

[Claim 23] Said renewal means of data is an information processor according to claim 18 to 22 characterized by directing that said file for updating after updating is transmitted to an information management system besides the above, and the information management system of said another side memorizes said file for updating after transmitted updating.

[Claim 24] said renewal means of data communicates -- said -- others -- the case where the information management system has memorized said file for updating -- said -- others -- the information processor according to claim 18 to 23 characterized by performing a data update process by referring to the file for updating which the information management system has memorized.

[Claim 25] The updating authorization information for distinguishing whether updating is permitted or not in addition to said identification number information and edit time information is memorized by said file for updating. Said renewal means of data The information processor according to claim 24 characterized by performing a data update process only when said file for updating which self-equipment has memorized is compared with the file for updating which the information management system besides the above has memorized and the memorized mutual updating authorization information is in agreement.

[Claim 26] When said renewal means of data is data with which said application data to share was related with time, It is predetermined unit data contained in said application data which was memorized by said database of self-equipment at the time of this communication link initiation, and to share. And while detecting the predetermined unit data created or changed after the time of the last communication link termination out of the predetermined unit data with which the date within the period set up beforehand is associated The information processor according to claim 18 to 25 characterized by detecting the identification number of the predetermined unit data deleted after the time of the last communication link termination.

[Claim 27] Said one predetermined unit data consists of two or more 2nd predetermined unit data. Said renewal means of data self-equipment -- or -- said -- others -- said number of the 2nd predetermined unit data which said a certain predetermined unit data memorized by each database of an information management system contain -- self-equipment -- and -- said -- others, when it changes with differences in the function of said application performed with an information management system Said predetermined unit data containing the 2nd predetermined unit data with many numbers concerned in said database of the equipment of the direction with many said 2nd predetermined unit data When updating based on said predetermined unit data memorized by said database of the equipment of little direction, The information processor according to claim 18 to 26 characterized by controlling so that said 2nd predetermined unit data which is not memorized by the

equipment of little direction in the database of the equipment of more ones is not deleted.

[Claim 28] Said one predetermined unit data consists of two or more 2nd predetermined unit data. Said renewal means of data When said maximum amounts of data of the 2nd predetermined unit data memorizable in said database of self-equipment, and an information management system besides the above differ The amount of data of said a certain 2nd predetermined unit data with which the maximum amount of data of said 2nd predetermined unit data was memorized by said database of the equipment of a large side When the maximum amount of data is larger than the maximum amount of data of said 2nd predetermined unit data of little equipment The information processor according to claim 18 to 27 characterized by controlling so that the amount of data said maximum amount of data was remembered to be by said database of large equipment at the time of the renewal of data of said mutual database is not deleted in said 2nd large predetermined unit data.

[Claim 29] The information processor according to claim 18 to 28 characterized by providing further an interface means to change into the data format [it is possible to memorize the application data into which the information processor concerned was edited by said two or more kinds of predetermined applications in said database, and] which can treat the data edited by said said predetermined application which correspond for every predetermined application of a class, is formed, and corresponds with said renewal means of data. [two or more]

[Translation done.]

* NOTICES *

JPO and INPIT are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the information processor for performing the updating approach of an application data of sharing the application data to which creation etc. was carried out by schedule pipe ** application, address administration application, etc. in the case of sharing between each database of two or more information management systems, and this.

[0002]

[Description of the Prior Art] In recent years, in the personal computer (PC) etc., various schedule pipe ** applications, address administration applications, etc. are used, and the application data to which creation etc. was carried out by such applications is stored in the database constituted by stores, such as a hard disk of the personal computer concerned. And when performing a schedule check etc., a user can read the schedule data stored in these databases, can make it display on a display etc., and can perform a schedule check etc.

[0003] Moreover, PC and a portable information device can share schedule data etc. now by holding application datas, such as schedule data stored in the database of PC which was mentioned above, in the database of portable information devices, such as PDA (Personal Digital Assistant).

[0004]

[Problem(s) to be Solved by the Invention] By the way, when each database of two information machines and equipment [mentioned / above], such as PC and PDA, shares schedule data etc. and editing tasks, such as additional creation of the schedule data concerned, modification, and deletion, are performed by the information-machines-and-equipment [one of] side, it is necessary to edit the schedule data stored in the database of the information machines and equipment of the other side as well as the above-mentioned contents of edit. For this reason, two information machines and equipment, such as PC and PDA, perform data communication, and processing which updates a mutual database to the newest data, and the so-called synchro processing are performed. In the conventional synchro processing, by comparing the schedule data memorized by the current mutual database with the schedule data memorized by the database mutual at the time of synchro processing termination last time, the contents of edit performed by each device side last time after the time of synchro processing termination were detected, and the database of each information machines and equipment was updated based on this detection result. When updating a database by such technique, and there is much amount of data of schedule data, the amount of data used as the candidate for a comparison, i.e., the amount of data treated to synchro processing, becomes large, and processing becomes complicated.

[0005] Moreover, the system that recent years share the schedule data with which LAN (Local Area Network) was built in many cases, schedule data were stored in the database server etc. in the interior of the organization of a firm etc., and two or more PCs connected to this LAN were stored in the database server is used. However, in the conventional synchro processing in the case of sharing schedule data etc. between PDA as each PC connected to such a LAN, PDA could perform synchro processing only with one PC connected to LAN, and the effective technique for performing synchro processing with other PCs was not proposed.

[0006] It is possible to control that are made in consideration of the above-mentioned situation, and a data update process becomes complicated also when the amount of data of the application data

stored in a database is large, and this invention aims at offering the information processor for realizing the renewal approach of data that a data update process can be performed in between [any / of two or more information management systems which share the data connected to the network etc.], and this.

[0007]

[Means for Solving the Problem] In order to solve the above-mentioned technical problem, the renewal approach of data of this invention according to claim 1 It is the device which shares between each database the application data which consists of 1 created by predetermined application, or two or more predetermined unit data. Data communication is performed between the information management systems in which edits, such as creation of the application data concerned, modification, and deletion, are possible. If it is the renewal approach of data which updates said application data which was memorized by said mutual database, and to share and the communication link between said information management systems is started It is the file for updating memorized at the information management system [one of] side. The file for updating which stored the identification number information which identifies said predetermined unit data contained in said application data in the time of the last communication link being completed to share, and the communication link time information which shows the last communication link time of day, The identification number information which identifies said predetermined unit data contained in said application data at this communication link initiation time with which while was memorized by said database of an information management system, and to share, And by referring to the edit time information which shows the newest edit activation day for said every predetermined unit data While detecting the predetermined unit data created or changed after the time of the last communication link termination out of said predetermined unit data contained in said application data which was memorized by the database of one [said] information management system, and to share The identification number of the predetermined unit data deleted after the time of the last communication link termination is detected. After updating said database of the information management system of another side based on the detection result concerned, It is considering as the updating-based on contents and this communication link time of day of said database after updating memorized by one [said] information management system-communication link time information which shows identification number information and communication link time of day which are stored in said file for updating description.

[0008] Moreover, the renewal approach of data according to claim 2 is a device which shares between each database the application data which consists of 1 created by predetermined application, or two or more predetermined unit data. Data communication is performed between the information management systems in which edits, such as creation of the application data concerned, modification, and deletion, are possible. If it is the renewal approach of data which updates said application data which was memorized by said mutual database, and to share and the communication link between said information management systems is started It is the file for updating memorized at said information management system [one of] side. The file for updating which stored the identification number information which identifies said predetermined unit data contained in said application data in the time of the last communication link being completed to share, and the communication link time information which shows the last communication link time of day, The identification number information which identifies said predetermined unit data contained in said application data which was memorized by said database of one [said] information management system at this communication link initiation time, and to share, And by referring to the edit time information which shows the newest edit activation day for said every predetermined unit data While detecting the predetermined unit data created or changed after the time of the last communication link termination out of said predetermined unit data contained in said application data which was memorized by the database of one [said] information management system, and to share The identification number of the predetermined unit data deleted after the time of the last communication link termination is detected. Based on the detection result concerned, said database of the information management system of another side is updated. The identification number information which identifies said predetermined unit data contained in said application data which was memorized by said database of the information management system of said another side at this

communication link initiation time, and to share, In the information management system of said another side, predetermined unit data create after the time of communication link termination last time. By referring to the edit flag information which shows the thing which are matched with the predetermined unit data concerned and memorized, and which was created, changed or deleted, when changed or deleted While detecting the predetermined unit data created or changed after the time of the last communication link termination out of said predetermined unit data contained in said application data which was memorized by the database of one [said] information management system, and to share The identification number of the predetermined unit data deleted after the time of the last communication link termination is detected. After updating said database of one [said] information management system based on the detection result concerned, It is characterized by updating the communication link time information which shows the identification number information and communication link time of day which are stored in said file for updating based on the contents and this communication link time of day of said database after updating memorized by one [said] information management system.

[0009] Moreover, the renewal approach of data according to claim 3 is characterized by the information management system of said another side being a pocket mold information management system in the renewal approach of data according to claim 1 or 2.

[0010] Moreover, the renewal approach of data according to claim 4 is set to the renewal approach of data according to claim 1 to 3. The inside of said predetermined unit data contained in said application data which it is at this communication link time, and was memorized by the database of one [said] information management system, and to share, The predetermined unit data after the time of day when the time of day which the same identification number is stored in said file for updating, and is shown in said edit time information is shown in said communication link time information The inside of said predetermined unit data contained in said application data which it will distinguish if changed after the time of the last communication link termination, and is at this communication link time, and was memorized by the database of one [said] information management system, and to share, The predetermined unit data of the identification number which is not stored in said file for updating Will distinguish, if created after the time of the last communication link termination, and the identification number information stored in said file for updating is referred to. When there are identification numbers other than the identification number of said predetermined unit data contained in said application data which it is at this communication link initiation time, and was memorized by the database of one [said] information management system, and to share It is characterized by distinguishing the predetermined unit data identified with the identification number concerned, if deleted after the time of the last communication link termination.

[0011] Moreover, the renewal approach of data according to claim 5 is set to the renewal approach of data according to claim 1 to 4. Having been changed last time in one [said] information management system and the information management system of said another side after the time of communication link termination the detected predetermined unit data Transmit to the information management system of the other party, and the predetermined unit data concerned which transmitted are overwritten at the predetermined unit data identified with the same identification number as the transmitted predetermined unit data in said database of the other party. Having been created last time in one [said] information management system and the information management system of said another side after the time of communication link termination the detected predetermined unit data Transmit to the information management system of the other party, and it newly writes in said database of the other party. Having been deleted last time in one [said] information management system and the information management system of said another side after the time of communication link termination the identification number of the detected predetermined unit data It transmits to the information management system of the other party, and is characterized by deleting the predetermined unit data identified with the transmitted identification number which was memorized by said database of the other party.

[0012] Moreover, the renewal approach of data according to claim 6 is set to the renewal approach of data according to claim 5. The predetermined unit data created last time in the information management system of said another side after the time of communication link termination In case it transmits to one [said] information management system and writes in said database The

identification number which gave the identification number and was given to the predetermined unit data to write in is transmitted to the information management system of said another side. It is characterized by relating the identification number given to said database in the information management system of said another side with the predetermined unit data created last time after the time of communication link termination, and memorizing it.

[0013] Moreover, the renewal approach of data according to claim 7 is characterized by transmitting said file for updating after updating memorized by one [said] information management system to the information management system of said another side, and the information management system of said another side memorizing said file for updating after transmitted updating in the renewal approach of data according to claim 1 to 6.

[0014] Moreover, the renewal approach of data according to claim 8 is a device which shares between each database the application data which consists of 1 created by predetermined application, or two or more predetermined unit data. Data communication is performed between the information management systems in which edits, such as creation of the application data concerned, modification, and deletion, are possible. It is the renewal approach of data which updates said application data which was memorized by said mutual database, and to share. The identification number information which identifies said predetermined unit data contained in said application data at this communication link initiation time with which while was memorized by said database of an information management system, and to share, In one [said] information management system, predetermined unit data create after the time of communication link termination last time. By referring to the edit flag information which shows the thing which are matched with the predetermined unit data concerned and memorized, and which was created, changed or deleted, when changed or deleted While detecting the predetermined unit data created or changed after the time of the last communication link termination out of said predetermined unit data contained in said application data which was memorized by the database of one [said] information management system, and to share The identification number of the predetermined unit data deleted after the time of the last communication link termination is detected, and it is characterized by updating said database of the information management system of another side based on the detection result concerned.

[0015] Moreover, the renewal approach of data according to claim 9 is characterized by one [said] information management system being a pocket mold information management system in the renewal approach of data according to claim 8.

[0016] Moreover, the renewal approach of data according to claim 10 In the renewal approach of data according to claim 8 or 9, having been changed last time in one [said] information management system and the information management system of said another side after the time of communication link termination the detected predetermined unit data Transmit to the information management system of the other party, and the predetermined unit data concerned which transmitted are overwritten at the predetermined unit data identified with the same identification number as the transmitted predetermined unit data in said database of the other party. Having been created last time in one [said] information management system and the information management system of said another side after the time of communication link termination the detected predetermined unit data Transmit to the information management system of the other party, and it newly writes in said database of the other party. Having been deleted last time in one [said] information management system and the information management system of said another side after the time of communication link termination the identification number of the detected predetermined unit data It transmits to the information management system of the other party, and is characterized by deleting the predetermined unit data identified with the transmitted identification number which was memorized by said database of the other party.

[0017] Moreover, in the renewal approach of data according to claim 1 to 10, the renewal approach of data according to claim 11 is characterized by updating the contents of record of said mutual database, when the communication link of one [said] information management system and the information management system of said another side was started and the memorized mutual updating authorization information is [the updating authorization information which both have memorized beforehand is compared and] in agreement.

[0018] Moreover, the renewal approach of data according to claim 12 When it is data with which said application data to share was related with time in the renewal approach of data according to claim 1 to 11, It is predetermined unit data contained in said application data which was memorized by said database of one [said] information management system at the time of this communication link initiation, and to share. And while detecting the predetermined unit data created or changed after the time of the last communication link termination out of the predetermined unit data with which the date within the period set up beforehand is associated It is characterized by detecting the identification number of the predetermined unit data deleted after the time of the last communication link termination.

[0019] Moreover, the renewal approach of data according to claim 13 In the renewal approach of data according to claim 1 to 12, said one predetermined unit data consists of two or more 2nd predetermined unit data. When said number of the 2nd predetermined unit data which said a certain predetermined unit data memorized by each database of said two information management systems which communicates contain changes with differences in the function of said application performed with each aforementioned information management system Said predetermined unit data containing the 2nd predetermined unit data with many numbers concerned in said database of said information management system of the direction with many said 2nd predetermined unit data When updating based on said predetermined unit data memorized by said database of said information management system of little direction, It is characterized by deleting said 2nd predetermined unit data which is not memorized by said information management system of little direction in the database of said information management system of more ones.

[0020] Moreover, the renewal approach of data according to claim 14 In the renewal approach of data according to claim 1 to 13, said one predetermined unit data consists of two or more 2nd predetermined unit data. When said maximum amounts of data of the 2nd predetermined unit data memorizable in said database in each aforementioned information management system differ The amount of data of said a certain 2nd predetermined unit data with which the maximum amount of data of said 2nd predetermined unit data was memorized by said database of said information management system of a large side When the maximum amount of data is larger than the maximum amount of data of said 2nd predetermined unit data by the side of said few information management systems The amount of data said maximum amount of data was remembered to be by said database of said large information management system at the time of the renewal of data of the mutual database between said information management systems is characterized by making it not delete said 2nd large predetermined unit data.

[0021] Moreover, the renewal approach of data according to claim 15 They are two or more information management systems which share the database which stored the application data which consists of 1 which was connected to the network and created by predetermined application, or two or more predetermined unit data. Either of two or more information management systems in which edits, such as creation of the application data with which each was stored in said database to share, modification, and deletion, are possible, It is the pocket mold information management system which shares between a self database two or more information management systems and said application datas to share concerned. In case data communication is performed between the pocket mold information management systems in which edits, such as creation of the application data concerned, modification, and deletion, are possible If it is the renewal approach of data which updates said application data which was memorized by said mutual database, and to share and the communication link between said information management system and said pocket mold information management system is started It is the file for updating memorized by said pocket mold information management system. The file for updating which stored the identification number information which identifies said predetermined unit data contained in said application data in the time of the last communication link being completed to share, and the communication link time information which shows the last communication link time of day, The identification number information which identifies said predetermined unit data contained in said application data which was memorized by said database of said information management system at this communication link initiation time, and to share, And by referring to the edit time information which shows the newest edit activation day for said every predetermined unit data While detecting the predetermined unit data created or changed after the

time of the last communication link termination out of said predetermined unit data contained in said application data which was memorized by the database of said information management system, and to share The identification number of the predetermined unit data deleted after the time of the last communication link termination is detected. Based on the detection result concerned, said database of said pocket mold information management system is updated. The identification number information which identifies said predetermined unit data contained in said application data which was memorized by said database of said pocket mold information management system at this communication link initiation time, and to share, In said pocket mold information management system, predetermined unit data create after the time of communication link termination last time. By referring to the edit flag information which shows the thing which are matched with the predetermined unit data concerned and memorized, and which was created, changed or deleted, when changed or deleted While detecting the predetermined unit data created or changed after the time of the last communication link termination out of said predetermined unit data contained in said application data which was memorized by the database of said information management system, and to share The identification number of the predetermined unit data deleted after the time of the last communication link termination is detected. After updating said database of said information management system based on the detection result concerned, It is characterized by updating the communication link time information which shows the identification number information and communication link time of day which are stored in said file for updating based on the contents and this communication link time of day of said database after updating memorized by said pocket mold information management system.

[0022] Moreover, the renewal approach of data according to claim 16 The inside of said predetermined unit data contained in said application data which it is at this communication link time, and was memorized by the database of said information management system in the renewal approach of data according to claim 15, and to share, The predetermined unit data after the time of day when the time of day which the same identification number is stored in said file for updating, and is shown in said edit time information is shown in said communication link time information The inside of said predetermined unit data contained in said application data which it will distinguish if changed after the time of the last communication link termination, and is at this communication link time, and was memorized by the database of said information management system, and to share, The predetermined unit data of the identification number which is not stored in said file for updating Will distinguish, if created after the time of the last communication link termination, and the identification number information stored in said file for updating is referred to. When there are identification numbers other than the identification number of said predetermined unit data contained in said application data which it is at this communication link initiation time, and was memorized by the database of said information management system, and to share It is characterized by distinguishing the predetermined unit data identified with the identification number concerned, if deleted after the time of the last communication link termination.

[0023] Moreover, the renewal approach of data according to claim 17 In the renewal approach of data according to claim 15 or 16, having been changed last time in said information management system and said pocket mold information management system after the time of communication link termination the detected predetermined unit data Transmit to the information management system of the other party, and the predetermined unit data concerned which transmitted are overwritten at the predetermined unit data identified with the same identification number as the transmitted predetermined unit data in said database of the other party. Having been created last time in said information management system and said pocket mold information management system after the time of communication link termination the detected predetermined unit data Transmit to the information management system of the other party, and it writes in said database of the other party. Having been deleted last time in said information management system and said pocket mold information management system after the time of communication link termination the identification number of the detected predetermined unit data It transmits to the information management system of the other party, and is characterized by deleting the predetermined unit data identified with the transmitted identification number which was memorized by said database of the other party.

[0024] An information processor according to claim 18 moreover, the application data which

consists of 1 created by predetermined application, or two or more predetermined unit data While sharing with other information management systems in which edits, such as creation of the application data concerned, modification, and deletion, are possible It is the information processor in which edits, such as creation of the application data concerned, modification, and deletion, are possible. The identification number information which identifies said application data to share and said predetermined unit data contained in said application data to share, And the database which memorizes the edit time information which shows the newest edit activation day for said every predetermined unit data, It has a renewal means of data to update said application data which was memorized by the database of an information management system and to share. said -- others -- the time of performing data communication between information management systems -- said database -- and -- said -- others -- The identification number information which identifies said predetermined unit data contained in said application data in the time of the last communication link ending said renewal means of data to share, and the file for updating which stored the communication link time information which shows the last communication link time of day -- having -- **** -- said -- others, if a communication link is started between information management systems By referring to the identification number information and edit time information which were remembered to be the file for updating concerned by said database of self-equipment While detecting the predetermined unit data created or changed after the time of the last communication link termination out of said predetermined unit data contained in said application data which was memorized by said database of self-equipment, and to share The identification number of the predetermined unit data deleted after the time of the last communication link termination is detected. the detection result concerned -- being based -- said -- others -- it is considering as the updating [the communication link time information which shows the identification number information and communication link time of day which store the database of an information management system in said file for updating based on the contents and this communication link time of day of said database after updating after controlling updating] description.

[0025] Moreover, an information processor according to claim 19 is set to an information processor according to claim 18. Creation [set to an information management system and] of said predetermined unit data said -- others -- the time of an information management system and a communication link -- last time -- the time of communication link termination or subsequent ones -- said -- others -- When the edit flag information which shows having been changed or deleted is transmitted Said renewal means of data by referring to the transmitted edit flag information concerned said -- others, while detecting the predetermined unit data created or changed after the time of the last communication link termination out of said predetermined unit data contained in said application data which was memorized by the database of an information management system, and to share The identification number of the predetermined unit data deleted after the time of the last communication link termination is detected, and it is characterized by updating said database of self-equipment based on the detection result concerned.

[0026] An information processor according to claim 20 is set to an information processor according to claim 18 or 19. Moreover, said renewal means of data The inside of said predetermined unit data contained in said application data which it is at this communication link time, and was memorized by said database of self-equipment, and to share, The predetermined unit data after the time of day when the time of day which the same identification number is stored in said file for updating, and is shown in said edit time information is shown in said communication link time information The inside of said predetermined unit data contained in said application data which it will distinguish if changed after the time of the last communication link termination, and is at this communication link time, and was memorized by said database of self-equipment, and to share, The predetermined unit data of the identification number which is not stored in said file for updating Will distinguish, if created after the time of the last communication link termination, and the identification number information stored in said file for updating is referred to. When there are identification numbers other than the identification number of said predetermined unit data contained in said application data which it is at this communication link initiation time, and was memorized by said database of self-equipment, and to share It is characterized by distinguishing the predetermined unit data identified with the identification number concerned, if deleted after the time of the last communication link termination.

[0027] An information processor according to claim 21 is set to an information processor according to claim 18 to 20. Moreover, said renewal means of data Having been changed last time in said database of self-equipment after the time of communication link termination the detected predetermined unit data said -- others -- an information management system -- transmitting -- said -- others, while directing to overwrite the predetermined unit data concerned which transmitted to the predetermined unit data identified with the same identification number as the transmitted predetermined unit data in said database of an information management system said -- others -- having been changed last time in said database of an information management system after the time of communication link termination the detected predetermined unit data Receive from an information management system besides the above, and the predetermined unit data concerned which received are overwritten at the predetermined unit data identified with the same identification number as the received predetermined unit data in said database of self-equipment. While having been created last time in said database of self-equipment after the time of communication link termination transmits the detected predetermined unit data to an information management system besides the above and it directs the writing to said database of an information management system besides the above said -- others -- having been created last time in said database of an information management system after the time of communication link termination the detected predetermined unit data Receive from an information management system besides the above, and it writes in said database of self-equipment. Having been deleted last time in said database of self-equipment after the time of communication link termination the identification number of the detected predetermined unit data said -- others -- an information management system -- transmitting -- said -- others, while directing to delete the predetermined unit data identified with the transmitted identification number which was memorized by said database of an information management system said -- others -- having been deleted last time in said database of an information processor after the time of communication link termination the identification number of the detected predetermined unit data It receives from an information management system besides the above, and is characterized by deleting the predetermined unit data identified with the received identification number which was memorized by said database of self-equipment.

[0028] An information processor according to claim 22 is set to an information processor according to claim 21. Moreover, said renewal means of data said -- others -- the predetermined unit data created last time in said database of an information management system after the time of communication link termination In case it receives from an information management system besides the above and writes in said database of self-equipment The identification number which gave the identification number and was given to the predetermined unit data to write in is transmitted to an information management system besides the above. said -- others -- it is characterized by directing to relate the identification number given to said database in an information management system with the predetermined unit data created last time after the time of communication link termination, and to memorize it.

[0029] Moreover, the information processor according to claim 23 is characterized by directing that said renewal means of data transmits said file for updating after updating to an information management system besides the above, and the information management system of said another side memorizes said file for updating after transmitted updating in the information processor according to claim 18 to 22.

[0030] moreover, in an information processor according to claim 24, said renewal means of data communicates in an information processor according to claim 18 to 23 -- said -- others -- the case where the information management system has memorized said file for updating -- said -- others -- it is characterized by performing a data update process by referring to the file for updating which the information management system has memorized.

[0031] An information processor according to claim 25 is set to an information processor according to claim 24. Moreover, for said file for updating The updating authorization information for distinguishing whether updating is permitted or not in addition to said identification number information and edit time information is memorized. Said renewal means of data Only when said file for updating which self-equipment has memorized is compared with the file for updating which the

information management system besides the above has memorized and the memorized mutual updating authorization information is in agreement, it is characterized by performing a data update process.

[0032] An information processor according to claim 26 is set to an information processor according to claim 18 to 25. Moreover, said renewal means of data When said application data to share is data related with time, It is predetermined unit data contained in said application data which was memorized by said database of self-equipment at the time of this communication link initiation, and to share. And while detecting the predetermined unit data created or changed after the time of the last communication link termination out of the predetermined unit data with which the date within the period set up beforehand is associated It is characterized by detecting the identification number of the predetermined unit data deleted after the time of the last communication link termination.

[0033] Moreover, an information processor according to claim 27 is set to an information processor according to claim 18 to 26. Said one predetermined unit data consists of two or more 2nd predetermined unit data. Said renewal means of data self-equipment -- or -- said -- others -- said number of the 2nd predetermined unit data which said a certain predetermined unit data memorized by each database of an information management system contain -- self-equipment -- and -- said -- others, when it changes with differences in the function of said application performed with an information management system Said predetermined unit data containing the 2nd predetermined unit data with many numbers concerned in said database of the equipment of the direction with many said 2nd predetermined unit data In case it updates based on said predetermined unit data memorized by said database of the equipment of little direction, it is characterized by controlling so that said 2nd predetermined unit data which is not memorized by the equipment of little direction in the database of the equipment of more ones is not deleted.

[0034] Moreover, an information processor according to claim 28 is set to an information processor according to claim 18 to 27. Said one predetermined unit data consists of two or more 2nd predetermined unit data. Said renewal means of data When said maximum amounts of data of the 2nd predetermined unit data memorizable in said database of self-equipment, and an information management system besides the above differ The amount of data of said a certain 2nd predetermined unit data with which the maximum amount of data of said 2nd predetermined unit data was memorized by said database of the equipment of a large side When the maximum amount of data is larger than the maximum amount of data of said 2nd predetermined unit data of little equipment It is characterized by controlling so that the amount of data said maximum amount of data was remembered to be by said database of large equipment at the time of the renewal of data of said mutual database is not deleted in said 2nd large predetermined unit data.

[0035] Moreover, an information processor according to claim 29 is set to an information processor according to claim 18 to 28. It is possible to memorize the application data into which the information processor concerned was edited by said two or more kinds of predetermined applications in said database. More than one correspond for every predetermined application of a class, and it is prepared and is characterized by providing further an interface means to change the data edited by said said corresponding, predetermined application into the data format which can be treated with said renewal means of data.

[0036]

[Embodiment of the Invention] Hereafter, the operation gestalt of this invention is explained with reference to a drawing.

A. 1st operation gestalt A-1. system **** -- drawing 1 first shows the example of an outline configuration of the system by which the renewal approach of data concerning the 1st operation gestalt of this invention is applied. As shown in this drawing, in this example of a system configuration, in a personal computer (PC) 300, the application data created by predetermined application (it considers as schedule pipe ** application below) is stored in the database of PC300, and the case where PC300 and Personal Digital Assistant 200 share this application data is illustrated. And by the renewal approach of data concerning this operation gestalt, Personal Digital Assistant 200 and PC300 will update the application data which was stored in the database of each device and to share to the newest thing by performing data communication.

[0037] This Personal Digital Assistant 200 is equipped with CPU (Central Processing Unit), ROM

(Read Only Memory), RAM (Random Access Memory), etc., and various functions can be realized by performing the above-mentioned schedule pipe ** application program, a address administration application program, etc. which were memorized by ROM etc. Moreover, Personal Digital Assistant 200 has the database (it consists of flash memories etc.) which memorizes the application data (schedule pipe Osamu) shared with PC300 as mentioned above. Here, Personal Digital Assistant 200 can perform editing tasks, such as new creation of the application data memorized by the database concerned based on the directions inputted by the user, correction, and deletion, by performing the schedule pipe ** application program with which CPU was memorized by ROM.

[0038] Moreover, Personal Digital Assistant 200 has the band section 202 and a drum 201 like the usual common electronic wrist watch, and the various electron devices mentioned above to this drum 201 interior are built in. Moreover, the liquid crystal display 204 is formed in the core side of a drum 201, and various, time of day, the information according to the schedule pipe ** application data mentioned above, i.e., schedule information etc., etc., information is displayed on this liquid crystal display 204.

[0039] Moreover, Personal Digital Assistant 200 has the rechargeable battery for driving electron devices to build in, such as CPU mentioned above, and when charging at this rechargeable battery, it is held in a station 100 like illustration. If the station 100 has the function to charge a station 100, Personal Digital Assistant 200 is held like illustration and a charge directions carbon button etc. is pushed, charge over the rechargeable battery of Personal Digital Assistant 200 will be performed.

[0040] Moreover, the station 100 has the function to relay the data communication concerned in case Personal Digital Assistant 200 performs data communication between the external information management systems of PC300 grade. In performing the renewal approach of data which performs PC300 and data communication which memorize the application data which Personal Digital Assistant 200 shares, and starts this operation gestalt In the condition of having held in the station 100 like illustration, data communication processing will be performed between PCs300 through a station 100. In addition, in this example, although data communication is performed between Personal Digital Assistant 200 and PC300 through a station 100, it may be made to perform an immediate-data communication link among both by connecting Personal Digital Assistant 200 and PC300 by a direct cable etc., or using a radio function etc.

[0041] PC300 is a common personal computer and various functions are realized by performing the application program memorized by storage, such as a hard disk drive unit. Moreover, PC300 stores the database (it consists of hard disk drive units etc.) for the application data with which edits, such as new creation, modification, and deletion, were made by performing a schedule pipe ** application program.

[0042] Thus, a schedule pipe ** application data is stored in each database, PC300 and Personal Digital Assistant 200 are sharing it, and thereby, if Personal Digital Assistant 200 is possessed even if it is a going-out place etc., the user of Personal Digital Assistant 200 can refer to the schedule information according to a schedule pipe ** application data, or can edit them. Of course, it is possible to be able to refer to the schedule information according to the schedule pipe ** application data concerned etc. also in PC300, and to edit these. Thus, in Personal Digital Assistant 200 and PC300, since it is possible to edit the application data memorized in the mutual database, in case Personal Digital Assistant 200 is held in a station 100 like illustration and data communication is performed between PCs300, synchro processing for updating the application data memorized by the mutual database to the newest information based on the contents of edit by the side of Personal Digital Assistant 200 and PC300 is performed. The synchro processing performed here is processing which each equipment cooperates and performs according to the synchro processing program memorized respectively to PC300 and Personal Digital Assistant 200, and explains the renewal approach of data hereafter realized when PC300 and Personal Digital Assistant 200 perform these synchro processing programs.

[0043] A-2. Renewal approach drawing 2 of data - drawing 7 are drawings showing radical Motoshara ** of the renewal approach of data concerning this operation gestalt performed between Personal Digital Assistant 200 and PC300 as mentioned above. The renewal approach of data concerning this operation gestalt is explained referring to these drawings. first, as a mode which performs renewal of data between Personal Digital Assistant 200 and PC300 The renewal of data in

the case of transmitting to Personal Digital Assistant 200 of the initial state which nothing has memorized, and writing in a database the application data created by the renewal 300 of data in an initial state, i.e., PC. After each has memorized the application data in the database, data communication is performed, and renewal of data reflecting the contents of the database of both at the time of a communication link may be performed.

[0044] A-2-1. Referring to renewal **** of data in the case of being in an initial state, and drawing 2, at for example, the time of a communication link immediately after initializing the time of a first-time communication link and Personal Digital Assistant 200 etc. has the database of Personal Digital Assistant 200 in an initial state, and explain the case where the application data memorized by the database of PC300 in this condition is stored in the database by the side of Personal Digital Assistant 200.

[0045] If an application data is created when a user performs schedule pipe ** application of PC300 as shown in this drawing, Item ID and edit time information will be matched and memorized by database (henceforth, PC database) 300a of PC300 for every item. Here, an item is the unit of the data treated by applications called PIM (Personal Information Manager) currently used for the current general target, such as address administration and schedule management, and one data with which the constant eye was described beforehand will be equivalent to one item in schedule pipe ** application. For this reason, "start time", "end time", the "location" and the "contents of a schedule" which are the contents of the constant eye beforehand, and the data with which was described are contained in one item, and the unit data which describe data, such as "start time" and "end time", are called the field. Therefore, also in this operation gestalt, the unit data to which it is indicated that "it is a constant eye beforehand" mentioned above are called an "item", and the unit data in which detail items, such as "start time" etc. contained in the schedule item concerned, are shown are called the "field." That is, the application data treated with this operation gestalt has the hierarchical DS that two or more "fields" is in the lower layer of an "item."

[0046] Here, the data of ** "an item" are stored in the part of ** "an item" in PC database 300a. That is, the data of two or more "fields" included in the "item" concerned are also stored in this part. Thus, it is ID information used in order that Item ID may identify an item when the application performed with PC300 processes although it matches with ** "an item" stored and Item ID and edit time information are stored, when new "item" is created by the application concerned, Item ID is given, and the given item ID is stored in PC database 300a. Moreover, with the application performed with PC300, edit time information is information which shows the newest time to which edit of new creation or modification was carried out, and this edit time information matches it with each item, and it is memorized by PC database 300a.

[0047] On the other hand, since it is an initial state, the data about the above-mentioned application are not memorized by database (it considers as terminal database henceforth) 200a of Personal Digital Assistant 200. The update process of an application data when above and data communication is performed for the storage condition of each PC database 300a and terminal database 200a between Personal Digital Assistant 200 and PC300 is as follows.

[0048] First, in PC300, about all the items of the application data memorized by PC database 300a at the time of communication link initiation, Item ID is changed into an identification number and the identification number information concerned and edit directions information are transmitted to a Personal Digital Assistant 200 side with an item. Here, edit directions information is the information for directing the contents of processing (new creation, modification, deletion) which should be performed to the item concerned in Personal Digital Assistant 200, and edit processing will be performed to the item concerned in Personal Digital Assistant 200 which received this according to this edit directions information. In addition, the identification number mentioned above becomes possible [controlling the data size which amount-of-data ** of the data which constitute Item ID is also the information on the small amount of data, and is held by the Personal Digital Assistant 200 side which has a limit in memory capacity as compared with PC later mentioned by changing into identification information with data size small in this way].

[0049] Moreover, in PC300, the identification number of an item and Item ID which transmitted to the Personal Digital Assistant 200 side are matched, and it stores in the synchro profile (file for updating) SP. If the synchro profile SP concerned is referred to, while being able to know by this the

item ID which transmitted to Personal Digital Assistant 200 at the time of the last communication link, and an identification number, the correspondence relation between each item ID and an identification number can be known. Furthermore, PC300 stores in the synchro profile SP the communication link time information which shows the time of day which communicated with Personal Digital Assistant 200, and User Information and PIM information. information for User Information to identify the user using the application data concerned here -- it is -- PIM information - how -- it is the information which shows whether PIM (application) is used.

[0050] Here, when Personal Digital Assistant 200 is an initial state, all the items of the application data memorized by PC database 300a of PC300 are transmitted with the identification number and edit directions information which were mentioned above. Here, since the application data is not memorized by terminal database 200a of Personal Digital Assistant 200, the information which directs to newly create about all items as edit directions information is transmitted to it. And the correspondence relation of the Item ID and identification number is described by the synchro profile SP about all the items of an application data. Moreover, PC300 describes PIM information, User Information, etc. while describing the time of day which updated by performing Personal Digital Assistant 200 and data communication as communication link time information of the synchro profile SP.

[0051] Since the edit directions information corresponding to all the items transmitted in the data of all the items transmitted from PC300 and Personal Digital Assistant 200 which received the identification number information and edit directions information which were matched with each item is what directs new creation as mentioned above, the data of these items are newly created to terminal database 200a. That is, the writing to terminal database 200a of the data of all the transmitted items is performed. Under the present circumstances, the identification number information corresponding to each item is matched with each item, and it stores in terminal database 200a. Thus, as shown in drawing 3, the application data stored in PC database 300a by the side of PC300 is stored in terminal database 200a, and Personal Digital Assistant 200 and PC300 can share the same application data, when this data update process is completed.

[0052] Moreover, in addition to each item and identification number information which were stored in terminal database 200a as mentioned above, in Personal Digital Assistant 200, edit flag information, periodical information, and lack flag information are stored in terminal database 200a. Here, edit flag information is later mentioned about this, although it is the information added when it set to Personal Digital Assistant 200, and new-create, and it changes or an item is deleted and the information which shows the contents of edit, such as new creation, modification, or deletion, is described. Though natural, since edit is not performed with Personal Digital Assistant 200 in the case of drawing 3, "NONE" is described about all items. In the case of drawing 3, periodical information is information which shows that it is the item in which application carried out automatic creation about schedule items performed periodically, such as a regular meeting performed on Monday every week instead of the item created by direct directions of a user, it is "FALSE" altogether, and as for this, no items are periodical, and being directly created by directions of a user is shown. With this operation gestalt, when this periodical information is "ON", that data is removed from the object of an update process. Moreover, in Personal Digital Assistant 200 and PC300, lack flag information is a flag added when the made numbers of the fields which an item is made to contain differ, and is later mentioned about this. In addition, although all lack flag information is "FALSE(s)" in the case of drawing 3 and lack flag information is disregarded in this case in the case of a data update process, when such periodical information and lack flag information are transmitted to a Personal Digital Assistant 200 side with data, such as an item, from PC300 as mentioned above, and periodical information and lack flag information are received, Personal Digital Assistant 200 will store that information in terminal database 200a.

[0053] A-2-2. When terminal database 200a of renewal Personal Digital Assistant 200 of data based on the contents of edit by the side of PC is in an initial state, it will be transmitted to Personal Digital Assistant 200, and all the application datas remembered to have mentioned above by PC database 300a will be written in terminal database 200a. On the other hand, when the data update process in an initial state which was mentioned above is performed, as shown in drawing 3, the application data shared to mutual terminal database 200a and PC database 300a of Personal Digital Assistant

200 and PC300 will be memorized. Thus, since it is possible for an application data to be memorized by the mutual database and to edit this application data into it in each equipment henceforth at that time, it is necessary to detect the contents of edit performed at the each Personal Digital Assistant 200 and PC300 side, and to update a mutual database according to the detection result concerned at the time of the renewal of data performed next.

[0054] First, the contents of edit performed by the PC300 side are detected, and it explains, referring to drawing 4 and drawing 5 about the approach of updating the application data memorized by terminal database 200a of Personal Digital Assistant 200 according to this detection result.

[0055] In PC300, drawing 4 newly creates a new item "HHH", deletes an item "DDD" from the storage condition (refer to drawing 3) of each database at the time of renewal of data by the initial state mentioned above being completed, and shows the case where changed the item "FFF" and it considers as "FFF".

[0056] After data updating by the initial state mentioned above, when such edit is performed in PC300, by the data update process concerning this operation gestalt, PC300 detects creation or a modification item, and the deleted identification number of an item after the time of the last data update process termination, and the data about the item which is not created, changed or deleted are transmitted to a Personal Digital Assistant 200 side. For this reason, although it is necessary to detect the edited item, the item edited by the following technique is detected with this operation gestalt.

[0057] First, the detection approach of the item newly created in PC300 after the time of the last data update process termination is explained. In this case, in PC300, the newly created item is detected by carrying out comparison reference of the synchro profile SP and the contents of current PC database 300a. It is as follows when it explains concretely. Item ID and identification number information for identifying the item memorized by the mutual database at the time of the last data update process being performed are stored in the synchro profile SP. For this reason, it is not stored in the synchro profile SP about the item ID of the item newly created after the time of the last renewal of data. Therefore, in PC300, out of the item ID memorized by PC database 300a, the item ID which is not memorized by the synchro profile SP is detected, and this item is distinguished as it is the newly created item. In the example shown in drawing 4, the item ID corresponding to the item in PC database 300a "HHH" is not memorized by the synchro profile SP. Therefore, PC300 can be distinguished as this item "HHH" is a newly created item.

[0058] Next, the detection approach of an item changed in PC300 after the time of the last data update process termination is explained. Also in this case, in PC300, the changed item is detected by carrying out comparison reference of the synchro profile SP and the contents of current PC database 300a. It is as follows when it explains concretely. The communication link time information which shows the time of day which performed the last data update process is stored in the synchro profile SP. On the other hand, the edit time information which shows the newest edit activation time for every item is memorized by PC database 300a. Therefore, the item the edit time information the latest time of day is indicated to be rather than the time of day shown in the communication link time information which is the item which has the item ID memorized by both synchro profile SP and PC database 300a in the item memorized by PC database 300a, and was memorized by the synchro profile SP is remembered to be is distinguished as it is the item changed after the time of the last data update process termination. In the example shown in drawing 4, Item ID exists in both and it can distinguish that it is the item by which the item "FFF" the latest time of day is described to be by edit time information from communication link time information was changed.

[0059] Next, the detection approach of the item ID of the item deleted in PC300 after the time of the last data update process termination is explained. Also in this case, in PC300, the item ID of the deleted item is detected by carrying out comparison reference of the synchro profile SP and the contents of current PC database 300a. It is as follows when it explains concretely. Item ID and identification number information for identifying the item memorized by the mutual database at the time of the last data update process being performed are stored in the synchro profile SP. On the other hand, the information about the item which recognizes current existence is stored in PC database 300a, and the information about the deleted item is not stored. Therefore, in PC300, out of the item ID memorized by the synchro profile SP, the item ID which is not memorized by PC database 300a is detected, and it distinguishes that it is the item from which the item corresponding

to this item ID was deleted. In the example shown in drawing 4 , the item ID corresponding to the item ID in the synchro profile SP "456" is not memorized by PC database 300a. Therefore, PC300 can be distinguished as it is the item from which the item "DDD" (refer to drawing 3) corresponding to this item ID "456" was deleted, and it can detect the item ID of the deleted item.

[0060] As explained above, in PC300, the item ID of the item from which the item created or changed in PC300 after the time of the last data update process termination was detected and deleted is detectable by carrying out comparison reference of the contents of the present PC database 300a, and the contents of the synchro profile SP. That is, completely unlike the conventional technique of comparing the live data of the item at the time of the last data update process, and the item memorized by the present database, and detecting a different part, i.e., the part currently edited, by the renewal approach of data concerning this operation gestalt, the item edited using information, such as Item ID, edit time information, and the last data update process activation time of day, is detectable. Therefore, as compared with the technique of detecting a part which compares the live data of each conventional item and is different, when the amount of data of an item is large, detection processing can be performed quickly. Moreover, by the conventional technique, since it is necessary to memorize all the item data at the time of the last data update process termination as a synchro profile, the amount of data of a synchro profile will become large. On the other hand, with this operation gestalt, since the live data of an item are not stored in a synchro profile but chisels, such as an identification number corresponding to the item ID and this, are stored in it, also when the amount of data of an item is large, the amount of data stored in a synchro profile will not become big.

[0061] In PC300, if the item created or changed and the deleted item ID are detected as mentioned above, about the item created or changed, the data of an item, the identification number which changed the item ID corresponding to this, and the edit directions information that new creation or modification is directed will be transmitted to a Personal Digital Assistant 200 side. Here, conversion to the identification number of the item ID of the changed item is performed by referring to the correspondence relation of the Item ID and the identification number which were memorized by the synchro profile SP. About the item ID of the item created newly on the other hand, a new identification number will be given and a new identification number and new Item ID are stored in the synchro profile SP in this case.

[0062] Moreover, about the deleted item, the identification number which changed that item ID, and the edit directions information that deletion of the data of the item specified with this identification number is directed are transmitted to a Personal Digital Assistant 200 side. About the deleted item, the item ID memorized by the synchro profile SP and an identification number are deleted.

[0063] Personal Digital Assistant 200 receives data, such as information which accompanies the item and this which were transmitted from the PC300 side as mentioned above, and which were changed [which were changed and were new-created], and an identification number which identifies the deleted item, and performs the following processings.

[0064] First, about the item it is indicated to be to edit directions information to newly have been created, the identification number of the item concerned and the data of an item are newly stored in terminal database 200a.

[0065] Next, about the item it is indicated to be to edit directions information to have been changed, the data of the item after modification transmitted to the part which describes the data of the item specified with the identification number of the item concerned stored in current terminal database 200a from the PC300 side are overwritten.

[0066] Next, about the identification number it is indicated to be to edit directions information to have been deleted, the data in which the identification number concerned in terminal database 200a is shown, and the data (an item, edit flag information, etc.) which were related with this identification number and memorized are deleted.

[0067] Thus, based on the contents edited in PC300 after the time of the last data update process termination, renewal of the application data memorized by terminal database 200a is performed, and as shown in drawing 5 , Personal Digital Assistant 200 and PC300 can share the same application data, when this data update process is completed.

[0068] A-2-3. Detect the renewal of data based on the contents of edit by the side of a Personal Digital Assistant, next the contents of edit performed by the Personal Digital Assistant 200 side, and explain, referring to drawing 6 and drawing 7 about the approach of updating the application data memorized by PC database 300a of PC300 according to this detection result.

[0069] In Personal Digital Assistant 200, drawing 6 newly creates a new item "GGG", deletes an item "CCC" from the storage condition (refer to drawing 3) of each database at the time of renewal of data by the initial state mentioned above being completed, and shows the case where changed the item "AAA" and it considers as "AAA'."

[0070] After data updating by the initial state mentioned above, when such edit is performed in Personal Digital Assistant 200, by the data update process concerning this operation gestalt, Personal Digital Assistant 200 detects creation or a modification item, and the deleted identification number of an item after the time of the last data update process termination, and the data about the item which is not created, changed or deleted are transmitted to the PC300 side. For this reason, although it is necessary to detect the edited item, the item edited by the following technique is detected with this operation gestalt.

[0071] First, in a Personal Digital Assistant 200 side, the item created, changed or deleted after the time of the last data update process termination is detected by referring to the edit flag information memorized by terminal database 200a. As mentioned above, when edit flag information performs editing tasks, such as modification of the data of new creation of an item, and an item, or deletion of an item, in Personal Digital Assistant 200, the information which shows the contents of edit is written in. Therefore, if this edit flag information is referred to, the item edited after the time of the last data update process termination is detectable. It is distinguished that it is the item by which the item "AAA" "modification" is described to be by edit flag information was changed in the example shown in drawing 6, it is distinguished that the item "GGG" described to be "new creation" by edit flag information is a newly created item, and it is distinguished that it is the item from which the item "CCC" described to be "deletion" by edit flag information be deleted.

[0072] In Personal Digital Assistant 200, if the item created or changed in Personal Digital Assistant 200 and the deleted item are detected as mentioned above, about the item created or changed, the data of an item, the identification number corresponding to this, and the edit flag information that shows that they are that it is new creation or modification will be transmitted to the PC300 side. In addition, in Personal Digital Assistant 200, since the identification number is not given about the item created newly, a temporary identification number "0" is given about the item newly created with Personal Digital Assistant 200. Moreover, about the deleted item, the identification number corresponding to the item and the edit flag information which shows that the contents of edit are deletion are transmitted to the PC300 side. Thus, with Personal Digital Assistant 200, if data are transmitted to the PC300 side, while resetting such edit flag information to "NONE", about the deleted item, all the data relevant to the item concerned will be deleted.

[0073] PC300 receives the data transmitted from the Personal Digital Assistant 200 side as mentioned above, and performs the following processings.

[0074] First, about the item it is indicated to be to edit flag information to have been changed, the identification number of this item is changed into Item ID by referring to the synchro profile SP, and the data of the item after modification transmitted to the part which describes the changed data of the item of Item ID which are stored in current PC database 300a from the Personal Digital Assistant 200 side are overwritten.

[0075] Next, about the identification number it is indicated to be to edit flag information to have been deleted, the identification number concerned is changed into Item ID by referring to the synchro profile SP, and the data of the changed item ID in PC database 300a and the item corresponding to this are deleted. Thus, while deleting the data of PC database 300a, about the item deleted by the Personal Digital Assistant 200 side, the item ID memorized by the synchro profile SP and an identification number are deleted.

[0076] Next, about the item it is indicated to be to edit flag information to newly have been created, the data of an item are newly stored in PC database 300a. Under the present circumstances, Item ID is given to the newly created item concerned by the schedule pipe ** application of PC300. Thus, when Item ID is given, while the item ID concerned is changed into an identification number and

Item ID and this identification number are newly stored in the synchro profile SP, the data of the item of this identification number and the item ID corresponding to this are transmitted to a Personal Digital Assistant 200 side. In Personal Digital Assistant 200 which received this, the identification number received into the part (part corresponding to "GGG" at the example of drawing 6) of the identification number of the data of the item transmitted from PC300 and the data of the same item is stored.

[0077] Thus, based on the contents edited in Personal Digital Assistant 200 after the time of the last data update process termination, renewal of the application data memorized by PC database 300a is performed, and as shown in drawing 7, Personal Digital Assistant 200 and PC300 can share the same application data, when this data update process is completed. By the renewal approach of data concerning this operation gestalt, by referring to the edit flag information memorized by terminal database 200a in Personal Digital Assistant 200, the item edited easily can be detected and only the data about the edited item can be transmitted to the PC300 side. Therefore, also in PC300 by the side of reception, an update process will become simple that what is necessary is just to make only the edit about the received item reflect in PC database 300a of self.

[0078] moreover, the above-mentioned explanation -- setting -- either Personal Digital Assistant 200 or PC300 -- although the case where edit of an application data was performed only by the side was explained, when edit is carried out by the application data in both Personal Digital Assistant 200 and PC300 after the time of the last data update process termination, what is necessary is just made to perform the data update process based on the contents of edit by the side of PC mentioned above, and the data update process based on the contents of edit by the side of a Personal Digital Assistant [0079] In this case, what is necessary is reporting that to a user and making it just make the contents of edit carried out by the equipment [one of] side choose, when edit which is different about the same item with Personal Digital Assistant 200 and PC300 is carried out. Moreover, when the information which shows the time of day which edited by the Personal Digital Assistant 200 side is memorized, the edit time information of PC database 300a is compared with the information which shows the edit time of day which the above-mentioned Personal Digital Assistant 200 side has memorized about the item by which edit was carried out in both, the contents of edit carried out behind are chosen automatically, and it may be made to perform a data update process.

[0080] A-3. Beyond actuation of PC and a Personal Digital Assistant is the basic principle of the renewal approach of data concerning this operation gestalt, and hereafter, in order to enforce this renewal approach of data, explain the processing actuation performed with PC300 and Personal Digital Assistant 200. In addition, processing actuation with each of these equipments follows the synchro processing program for terminals and the synchro processing program for PC which were beforehand memorized by the storage of each equipment etc.

[0081] First, if it considers as the condition that Personal Digital Assistant 200 and PC300 were connected possible [a communication link] and a data update process is directed by the user, it will distinguish whether all update processes are performed to the PC300 side, or a partial update process is performed. All update processes are data update processes in the case of being in the initial state mentioned above etc. here, and it is the processing which is not concerned with whether it was edited by the PC300 side, but transmits all the items that should perform the data update process set up beforehand to a Personal Digital Assistant 200 side, and is written in terminal database 200a.

[0082] On the other hand, partial update processes are the data update process based on the contents of edit by the side of PC mentioned above, and a data update process based on the contents of edit by the side of a Personal Digital Assistant, and it is transmitted to the equipment of the other party in this case only about the item edited last time after the time of data update process termination.

[0083] If the data update process between Personal Digital Assistant 200 and PC300 is directed, with PC300, it will be distinguished any shall be performed between all the above-mentioned update processes and a partial update process, and it will explain, referring to drawing 8 about this distinction processing.

[0084] First, if distinction processing is started, performing all update processes by the user will distinguish whether it is directed or not (step Sa1). Here, a user can direct now to perform all update processes compulsorily by operating PC300 grade. For example, even if it is the case where the application data is already written in terminal database 200a of Personal Digital Assistant 200, when

it carries out with a data update process etc. repeatedly, on the memory of Personal Digital Assistant 200, an application data will distribute and will be memorized. That is, if memory cannot be used efficiently but memory will be in such a condition, since it may cause processing delay or memory space can be pressed, also when a user wants to once initialize the memory of Personal Digital Assistant 200, i.e., terminal database 200a, and to write in an application data again, it is. In such a case, if all update processes are chosen, the data of terminal database 200a are all eliminated, the application data by the side of PC300 is written in as it is, that is, a user can relocate the data on memory efficiently.

[0085] As mentioned above, when the user has chosen all update processes, (distinction "YES" of step Sa1) and all update processes are performed. On the other hand, when all update processes are not chosen, a communication link error occurs at the time of the last communication link, or it distinguishes whether the range which performs renewal of data is changed (step Sa2). This will take into consideration that a possibility that fault may be in the application data stored in terminal database 200a, without performing the last data update process normally is high, if the error etc. has occurred at the time of the last communication link. Moreover, when the range which performs renewal of data is changed (i.e., when the data set as the object of renewal of data are changed), the data which serve as a candidate for updating after the modification concerned are not stored in terminal database 200a. Therefore, when the last communication link was an error, or when a setup of the renewal range of data is changed, (distinction "YES" of step Sa2) and all update processes are performed.

[0086] On the other hand, when the error etc. has not occurred at the time of the last communication link, (distinction "NO" of step Sa2) and judgment processing which judges whether the application data set as the object of renewal of data is stored in terminal database 200a of Personal Digital Assistant 200 are performed (step Sa3).

[0087] Here, drawing 9 is a flow chart which shows the procedure of judgment processing of judging whether the application data being stored in terminal database 200a. As shown in this drawing, PC300 receives the information which shows the number of items stored in terminal database 200a from Personal Digital Assistant 200, when performing the judgment processing concerned (step Sb1). And it distinguishes whether the number of items shown in the received information is 0 (step Sb2). Here, when the number of items stored in terminal database 200a is 0, it judges with there being no application data in (distinction [of step Sb2] "YES") terminal database 200a (step Sb3), and the judgment processing concerned is ended.

[0088] On the other hand, when the number of items stored in terminal database 200a is not 0 (i.e., when the application data is stored in terminal database 200a), it judges with data being in (distinction "NO" of step Sb2), and terminal database 200a of Personal Digital Assistant 200 (step Sb4), and the judgment processing concerned is ended.

[0089] The above is the detail of the judgment processing (step Sa3) shown in drawing 8, after the judgment processing concerned is completed, the judgment result is referred to and the existence of the application data by the side of Personal Digital Assistant 200 is distinguished (step Sa4). Here, when judged with an application data being in a Personal Digital Assistant 200 side in the above-mentioned judgment processing, (distinction "NO" of step Sa4) and a partial update process are performed. On the other hand, when judged with there being no application data in a Personal Digital Assistant 200 side in the above-mentioned judgment processing, (distinction "YES" of step Sa4) and all update processes are performed.

[0090] Hereafter, although the above is the distinction processing which distinguishes any of all update processes or partial update process by PC300 are performed, since it is as the column of renewal of data in the case of being in the initial state mentioned above about the case where all update processes are performed having explained, the explanation is omitted and actuation of each equipment at the time of the data update process between PC300 in case a partial update process is performed, and Personal Digital Assistant 200 is explained.

[0091] Drawing 10 shows the data update process sequence flow chart between Personal Digital Assistant 200 in case a partial update process is performed, and PC300. As shown in this drawing, when a partial update process is performed, data, such as an item edited into the PC300 side from Personal Digital Assistant 200, are transmitted (step S11). Here, by referring to the edit flag

information on terminal database 200a, whether which item was edited detects Personal Digital Assistant 200, and it transmits data to the PC300 side only about the edited item. About the item specifically created newly, the data of an item, a temporary identification number, and the edit flag information that shows that it is new creation are transmitted to PC300. Moreover, about the changed item, the edit flag information which shows the data of an item [finishing / modification], an identification number, and having been changed is transmitted to PC300. Furthermore, about the deleted item, the edit flag information which shows the identification number of the item concerned and having been deleted is transmitted to PC300.

[0092] In PC300 which received the data by which edit was carried out [above-mentioned] from Personal Digital Assistant 200, the data stored in PC database 300a based on the received data are updated (step S12).

[0093] Here, drawing 11 is a flow chart which shows the procedure of an update process of PC database 300a based on the received data by the side of PC300. As shown in this drawing, with reference to the edit flag information in the received data, the contents of edit are distinguished first (step Sc 1). Here, when [from which edit flag information was deleted] ***** (ing), the identification number matched with the edit flag information concerned is changed into Item ID by referring to the synchro profile SP, and the item on PC database 300a specified by the item ID concerned is deleted (step Sc 2). And when it distinguishes whether there is any unsettled edit flag information (step Sc 3) and unsettled edit flag information is in the received data, it returns to a step Sc 1. On the other hand, when there is no unsettled edit flag information in distinction of a step Sc 3, it judges that the update process about all the items that received from Personal Digital Assistant 200 was ended, and the update process concerned is ended.

[0094] Next, in distinction of a step Sc 1, when it is shown that edit flag information is new creation, the data of the item which was matched and was transmitted to the edit flag information concerned are written in PC database 300a, and a new item is registered into PC database 300a (step Sc 4). Item ID is given to the item concerned by the application performed with PC300 by this (step Sc 5). And the item ID given in this way is changed into an identification number (step Sc 6). Then, it progresses to a step Sc 3 like the case of the deletion mentioned above, and it is distinguished whether there is any unsettled edit flag information.

[0095] Next, in distinction of a step Sc 1, when it is shown that edit flag information is modification, with reference to the data of the item matched with the edit flag information concerned, modification processing in consideration of the existence and field size of the lack field is performed (step Sc 7).

[0096] Here, it explains, referring to drawing 12 about the lack field. With this operation gestalt, the identification number is attached and treated for every item which constitutes an application data. As mentioned above, the data of such an item consist of two or more fields. By the way, since the number of the fields which can be contained in such each item differs by PIM, i.e., application software, it is also considered that the numbers of the fields which can contain each item with Personal Digital Assistant 200 and PC300 differ. When it updates simply, without taking into consideration the difference in such a number of the fields, the following problems may arise.

[0097] For example, as shown in drawing 12, when the received data of an item which were changed consist of the three fields, the data of the item on PC database 300a used as the object which should be updated based on this consist of the four fields and the data of the received item are overwritten on the data of the item used as the candidate for updating, the data of the field F4 will be eliminated. With this operation gestalt, the field F4 eliminated when an update process simple in this way is performed is called the lack field.

[0098] Since required data will be eliminated when the above problems arise, when it is shown that edit flag information is modification, with this operation gestalt, the existence of the lack field has been distinguished with reference to the data of the item matched with the edit flag information concerned. Here, distinction of the lack field is distinguished by whether there are few fields of the item which received than the number of the fields of the item on PC database 300a updated by the item concerned. And it will distinguish, if there is the lack field when there are few fields of the item which received, and when there are many fields or it is the same, it distinguishes from a thing without the lack field.

[0099] When there was no lack field and it is distinguished as a result of such distinction of the

existence of the lack field, the usual modification processing in which the data of the item which received are overwritten at the data of the item on PC database 300a used as the candidate for updating is performed.

[0100] On the other hand, when there was the lack field and it is distinguished, the following modification processings are performed. As shown in drawing 12, when the data of an item which consist of three received FIRU are overwritten as it was, the lack field (field F4) erased is held as it is on PC database 300a, and it rewrites in the fields f1-f3 of the item which received even the fields F1-F3. Consequently, as shown in drawing 13, as data of the item concerned in PC database 300a after update process termination, the fields f1-f3 and the field F4 will remain.

[0101] Next, field size is the greatest data size which can contain each field in Personal Digital Assistant 200 or PC300. At the small terminal of Personal Digital Assistant 200 etc., since there is little memory capacity of a store as compared with common PC etc., the maximum data size of the field mentioned above may be small set up as compared with PC etc. In such a case, as shown in drawing 14, when the size of the field D4 of a certain item stored in PC database 300a is larger than the field size of above-mentioned Personal Digital Assistant 200 and the data by the side of Personal Digital Assistant 200 are received as data for updating, the data of the field D4 of the large size in this PC database 300a will be eliminated, and it will be rewritten by the data of the field d4 of small size. Therefore, in such a case, processing in which additional description of the data of the field d4 received from Personal Digital Assistant 200 is carried out at the part of the field D4 is performed, leaving the data currently written in the field D4 before updating. It is lost that the data described by the original field D4 are erased by this. For example, the data "it is very fine today" are stored in the original field D4, and when the data "a weather good tomorrow" have been transmitted from Personal Digital Assistant 200, the field D4 after updating serves as the data "it is very fine today (a weather good tomorrow)."

[0102] Thus, after the modification processing in consideration of the lack field or field size is completed, when it progresses to a step Sc 3 like the case where it is the deletion mentioned above, it is distinguished whether there is any unsettled edit flag information and there is an unsettled edit flag, it returns to a step Sc 1.

[0103] The above is an update process of PC database 300a based on the receiving contents shown in drawing 11, and after the update process concerned is completed, processing which detects the item edited in PC300 is performed after the time of the last data update process termination (step S13). In PC300 concerned, in case such an item is detected, the range of an item used as the candidate for detection can be set up. As are shown in drawing 15, and it was called the Y day back of the day of a past X day - the present from the present day, specifically, the detection range of an item can be set up now by time amount. The data treated with this operation gestalt as mentioned above are a schedule pipe ** application data, and the data of each item are data related with time, such as start time. For example, when the item as shown in drawing 15 is memorized by PC database 300a, even item C-G with which the time of the range of Y-day after a past X day was related will be extracted, and the data of an item edited out of these item C-G after the time of the last data update process termination will be detected. Deletion here, new creation, and the detection processing about an edited item which is called modification are as the column of the renewal of data based on the contents of edit by the side of PC mentioned above having explained. In addition, like illustration, a range limit of a period which was mentioned above is not performed about the item edited by the Personal Digital Assistant 200 side, but a data update process (refer to drawing 11) of PC database 300a is performed about all the items edited by the Personal Digital Assistant 200 side. This can control that unnecessary data are stored in a Personal Digital Assistant 200 side by restricting the item from which Personal Digital Assistant 200 is generally set as the object of renewal of data by a period etc. as mentioned above in consideration of the capacity of a store being small as compared with PC300.

[0104] Thus, termination of detection of the item edited by the PC300 side performs transmitting processing which transmits the data of the detected item, the identification number of an item to delete to a Personal Digital Assistant 200 side (step S14).

[0105] Here, drawing 16 is a flow chart to Personal Digital Assistants 200, such as data edited by the PC300 side, which shows the procedure of transmitting processing. As shown in this drawing, in this

processing, the contents of edit of the item detected by detection processing mentioned above are distinguished (step Sd1). Here, when the contents of edit are deletion, from the item ID of the item concerned, by referring to the synchro profile SP, an identification number is acquired and the edit directions information that the identification number concerned and deletion are directed is transmitted to Personal Digital Assistant 200 (step Sd2). And it distinguishes whether there are some (it is unsettled) which omit processing about the transmission concerned by the edit item detected in the detection processing mentioned above (step Sd3).

[0106] Next, in distinction of step Sd1, it distinguishes whether the data size of each field which constitutes the item after the modification is larger than predetermined size about the item distinguished as the contents of edit are modification (step Sd4). Here, predetermined size is the maximum number of data which can contain each field in Personal Digital Assistant 200. As mentioned above, since there is little memory capacity of a store as compared with common PC etc., at the small terminal of Personal Digital Assistant 200 etc., the maximum data size of the field may be small set up as compared with PC etc. In such a case, when the data of the item which has the field exceeding the maximum field size by the side of Personal Digital Assistant 200 are transmitted to a Personal Digital Assistant 200 side, this cannot be stored by the Personal Digital Assistant 200 side. When the data of larger field size than the field size which can hold Personal Digital Assistant 200 are created and changed by the PC300 side in consideration of a limit of the field size in such a small terminal etc., this distinction detects (distinction "YES" of step Sd4), and this, and adjusts data size of the field concerned (step Sd5). It specifically leaves only the part of the beginning of the character string described by the field concerned, and other data perform adjustment of deleting and transmit it to Personal Digital Assistant 200. Under the present circumstances, in addition to the adjusted item, the edit directions information that it directs an identification number and to change is transmitted to Personal Digital Assistant 200 (step Sd6). Thus, if it progresses to step Sd3 like the case of the above-mentioned deletion and there is an unsettled edit item after transmitting, it will return to step Sd1.

[0107] Next, in distinction of step Sd1, it distinguishes whether the size of each field of the item concerned is larger than the above-mentioned predetermined size like the case of modification mentioned above about the item distinguished as the contents of edit are new creation (step Sd8). And when the data of larger field size than the field size which can hold Personal Digital Assistant 200 are created and changed by the PC300 side, (distinction "YES" of step Sd8) and this are detected, and data size of the field concerned is adjusted (step Sd9). The concrete adjustment technique is as having mentioned above. And the edit directions information that it directs the item which changed and (step Sd10) adjusted the item ID of the item concerned to the identification number, an identification number, and to newly create is transmitted to Personal Digital Assistant 200 (step Sd11). Thus, if it progresses to step Sd3 like the case of the above-mentioned deletion and there is an unsettled edit item after transmitting, it will return to step Sd1.

[0108] On the other hand, the identification number (step Sc6 reference of drawing 11) which changed the item ID of the item created newly at the Personal Digital Assistant 200 side of the update process based on the receiving contents mentioned above when the transmitting processing concerned was performed about all the items that there is no unsettled item in distinction of step Sd3, and were detected is transmitted to Personal Digital Assistant 200 (step Sd12), and the transmitting processing concerned is ended.

[0109] Thus, after transmitting processing of the edited data which are shown in drawing 10 is completed, Personal Digital Assistant 200 receives the various data transmitted from PC300 by the transmitting processing concerned. In Personal Digital Assistant 200, the application data stored in terminal database 200a based on the contents of this received data is updated (step S15). A data update process here is as the column of the renewal of data based on the contents of edit by the side of PC mentioned above having explained, and performs a data update process according to the received edit directions information.

[0110] In PC300 which ended transmitting processing of the data edited on the other hand as mentioned above, the synchro profile SP is updated according to the contents of PC database 300a after being updated based on the contents of edit in each of Personal Digital Assistant 200 and PC300 (step S16). Thus, all data update processes between Personal Digital Assistant 200 and

PC300 are completed.

[0111] B. Explain the renewal approach of data concerning the 2nd operation gestalt, next the 2nd operation gestalt of this invention. Drawing 17 shows the example of an outline configuration of the system by which the renewal approach of data concerning the 2nd operation gestalt is applied. As shown in this drawing, in this example of a system configuration, there is a network system NS equipped with the server 400 connected with personal computer 301,302 of plurality (illustration is two) which has the same function as PC300 mentioned above, and these client PC301,302.. through LAN (Local Area Network), and Personal Digital Assistant 200' can perform now a data update process which was mentioned above between each client PC 301,302 of this network system NS.

[0112] It is the environment where each client PC301,302 .. can share between the above-mentioned network system NS the application data with which this edit was performed here if the application data edited by the schedule pipe ** application performed by each of the same client PC301,302 as the 1st operation gestalt mentioned above is shared on the database of a server 400 and an application data is edited by one of the clients PC.

[0113] An identification number, edit flag information, etc. which that of the basic principle of the renewal approach of data concerning the 2nd operation gestalt are completely the same as that of the 1st operation gestalt mentioned above, and were mentioned above at the time of renewal of data between each client PC will be used. furthermore, the synchro profile SP currently held only by the PC300 side with the above-mentioned 1st operation gestalt in order to enable it to perform renewal of data which was explained with the 1st operation gestalt in between [any / of each client PC of the network system NS with which Personal Digital Assistant 200' shares an application data between the 2nd operation gestalt] -- Personal Digital Assistant 200' -- he is trying to also hold a side

[0114] Thus, although a data update process can be performed between [any] the clients PC of a network system NS when Personal Digital Assistant 200' holds the synchro profile SP About this, Personal Digital Assistant 200' of an initial state and a client PC 301 perform a data update process. After edit is suitably performed after that by the Personal Digital Assistant 200' side and network-system NS side, between Personal Digital Assistant 200' and a client PC 302, the case where a data update process is performed is mentioned as an example, and is explained.

[0115] First, if a data update process is performed between Personal Digital Assistant 200' of an initial state, and a client PC 301, the application data currently shared at the time in the database NSa by the side of a network system NS will be written in database 200b of Personal Digital Assistant 200' as it is. An update process here is as the 1st operation gestalt mentioned above having explained.

[0116] The synchro profile SP held at the client PC 301 side in the time of such a data update process being completed is Item ID, the identification number corresponding to this, the PIM information, User Information, and communication link time information of the item stored in both of the database of a server 400 and Personal Digital Assistant 200', as shown in drawing 18 . With the 2nd operation gestalt, after renewal of data is completed and the renewal of a mutual database and renewal of the synchro profile SP are completed, the synchro profile SP after updating is transmitted to Personal Digital Assistant 200' from a client PC 301 side, and Personal Digital Assistant 200' holds this synchro profile SP within the end of a local. In addition, although the data stored in Database NSa are the same as that of PC database 300a of the 1st operation gestalt mentioned above and edit time information is also stored, only Item ID and the item are illustrated here for explanation simplification. Moreover, although the same data as terminal database 200a in the 1st operation gestalt mentioned above are stored also in database 200b of Personal Digital Assistant 200', only the item and the identification number are illustrated here for explanation simplification.

[0117] Then, the application data of Personal Digital Assistant 200' and a network system NS respectively stored in database 200b and Database NSa by the side is edited. Thus, suppose that the application data as shown in drawing 19 changed into the condition of having been stored in database 200b and Database NSa, respectively by performing edit processing by each **. As shown in this drawing, in this example, an item "Eee" is newly created by the Personal Digital Assistant 200' side, and the item "Ddd" is newly created by the network-system NS side. In connecting a client

PC 302 with Personal Digital Assistant 200' in this condition and performing a data update process, as shown in drawing 20, Personal Digital Assistant 200' transmits the synchro profile SP currently held to a client PC 302 side first (step S21). In the client PC 302 side which received this, it distinguishes whether User Information of the synchro profile SP from Personal Digital Assistant 200' and User Information of the synchro profile SP which the client PC 302 holds are in agreement (step S22).

[0118] Here, the same User Information and PIM information are described by the synchro profile SP which each client PC 301,302 holds. Therefore, User Information of the synchro profile SP of Personal Digital Assistant 200' which holds the synchro profile SP of a client PC 301 as it is must be in agreement with User Information stored in the synchro profile SP of a client PC 302. That this is not in agreement belongs to the user from whom Personal Digital Assistant 200' differs, or since it is what was revised unjustly, distinction processing which was mentioned above in the client PC 302 side is performed, and only when User Information is in agreement, a data update process is permitted.

[0119] Here, if both User Information is in agreement and a data update process is started, in a client PC 302, the item ID described by the synchro profile SP supplied from Personal Digital Assistant 200', an identification number, and communication link time information will be copied to the synchro profile SP which self holds (step S23). And edit data etc. are transmitted to a client PC 302 side from Personal Digital Assistant 200' like the 1st operation gestalt mentioned above (step S11 (refer to drawing 10)). A client PC 302 by referring to the copied synchro profile SP The same data update process as the 1st operation gestalt mentioned above (step S12, step S13, step S14, step S15, and step S16 (refer to drawing 10)) can be performed.)

[0120] thus, the synchro profile SP updated by the client PC 302 side after the same data update process as the 1st operation gestalt was performed -- Personal Digital Assistant 200' -- it is transmitted to a side (step S24), and Personal Digital Assistant 200' holds the synchro profile SP after updating (step S25). This comes to show the network system NS in this data update process termination time and the database of Personal Digital Assistant 200', and the synchro profile SP to drawing 21. The database NSa by the side of a network system NS and Personal Digital Assistant 200 of Personal Digital Assistant 200' are in the condition that the contents of edit by the side of each system and a terminal were reflected, like illustration.

[0121] Here, the contents in the time of the synchro profile SP of a client PC 301 performing a data update process between Personal Digital Assistant 200' first are described as it is. Therefore, even if a client PC 301 uses the synchro profile SP held now, a data update process cannot be performed between Personal Digital Assistant 200'. However, with the 2nd operation gestalt, since Personal Digital Assistant 200' holds the newest synchro profile SP next, in performing a data update process between Personal Digital Assistant 200' and a client PC 301 By transmitting the newest synchro profile SP to a client PC 301 side from Personal Digital Assistant 200', and rewriting the synchro profile SP by the side of a client PC 301, the same data update process as the 1st operation gestalt mentioned above can be performed.

[0122] on the other hand, by the technique of the conventional data update process The synchro profile SP (conventionally, the live data of items, such as an identification number, are stored) Since it is held only at the PC side, even if it is going to perform a data update process under the same conditions as the above-mentioned 2nd operation gestalt, and between a client PC 302 and Personal Digital Assistant 200' Since the synchro profile which shows the condition at the time of the last data update process termination existed in neither the client PC 302 nor Personal Digital Assistant 200', the last contents of edit after the time of data update process termination were undetectable. Therefore, the data update process between these equipments was not able to be performed.

[0123] By the renewal approach of data concerning the 2nd operation gestalt, the thing with which client PC301,302 of the network system NS mentioned above for which a data update process is performed in between becomes possible by making the synchro profile SP hold to a Personal Digital Assistant 200' side. Although Personal Digital Assistant 200' needs to hold the synchro profile SP in order to realize such a function, Personal Digital Assistant 200' which has a limit in memory capacity as compared with PC etc. has a demand of not wanting to make the large file of data size etc. held. However, the synchro profile SP used in the 2nd operation gestalt does not store the live data of an

item like before, and the data with which it was number-ized for specifying Item ID and items, such as an identification number, are stored. That is, the synchro profile SP can be made to hold with the 2nd operation gestalt, since he is trying to use the synchro profile SP by which data size was sharply reduced rather than the synchro profile used for the conventional data update process, without pressing the memory of Personal Digital Assistant 200' etc. Thus, with the 2nd operation gestalt, without pressing the memory of Personal Digital Assistant 200' etc., as mentioned above, the data update process between each client PC of a network system NS is enabled.

[0124] C. Various deformation which it is not limited to the 1st and 2nd operation gestalt which is a modification, and which mentioned this invention above, and is illustrated below is possible.

[0125] (Modification 1) He was trying to hold the identification number concerned in the operation gestalt mentioned above as information which identifies an item, without storing the item ID given by application called PIM, and the identification number which changed this item ID in the synchro profile SP, and holding Item ID in a Personal Digital Assistant 200 side. Although this can acquire the effectiveness of reducing the stored data by the side of Personal Digital Assistant 200 when the item ID given by the application side, such as PIM, is the large data size of 150 bytes. When the data size of the item ID given by the PIM side is small (for example, about 5-10 bytes) from the first, the processing which changes Item ID into an identification number is omitted, and you may make it use Item ID. In this case, an identification number is not held by the synchro profile SP, but the PIM information on Item ID and others etc. is stored in it, and Item ID is stored in it instead of an identification number also at terminal database 200a of Personal Digital Assistant 200. And what is necessary is just to use Item ID for discernment of each item by the side of Personal Digital Assistant 200. Also in this case, since the live data of an item are not necessarily stored, the increment in the synchro profile SP and the data volume of terminal database 200a is invited to neither terminal database 200a of Personal Digital Assistant 200, nor the synchro profile SP.

[0126] (Modification 2) a ***** [having given the identification number to a data unit called the item treated by PIM etc., and having been edited for every item concerned in the operation gestalt mentioned above, again] -- ** -- said distinction was performed. That is, although each processing is fundamentally performed for every data unit called an item with the operation gestalt mentioned above, the data unit to process does not need to be every item, for example, may be a field unit mentioned above. In this case, to give an identification number for every field and what is necessary is just made to perform detection processing of whether to have been edited for every field.

[0127] (Modification 3) With the operation gestalt mentioned above, although the synchro processing program performed by the PC300 and client PC 301,302 side treats the application data edited by applications, such as single PIM, it may treat the application data by which PC300 and the client PC301,302 grade were created with two or more kinds of applications again. In this case, for a certain reason, it is also necessary to take into consideration that the data configurations (for example, the number of the fields which can contain an item which was mentioned above, the maximum data size of the field, etc.) treated for two or more kinds of every applications differ by the synchro processing program side which mentioned above the difference among these data configurations.

[0128] Moreover, in order to perform a data update process like the operation gestalt mentioned above to the application data created by two or more kinds of applications in this way, you may make it constitute a PC300 and client PC 301,302 side, as shown in drawing 22. The functional configuration by the side of PC illustrated to this drawing is [the synchro engine section 60 which is the functional component realized by the synchro processing program mentioned above, and] plurality (in the example of illustration). The 1st application section 61 which is the functional component realized by application programs, such as PIM of 3 classes, the 2nd application section 62, and the 3rd application section 63, It has the interface sections 61a, 62a, and 63a made to intervene between each of these application sections, and the synchro engine section 60. Each interface sections 61a, 62a, and 63a are formed corresponding to each of the 1st application section 61, the 2nd application section 62, and the 3rd application section 63, and change each interface section into the format that the synchro engine section 60 can treat the DS of the corresponding application section etc. Thereby, in the synchro engine section 60 side, since he does not need to be conscious of the difference in the data configuration for two or more kinds of every applications etc.,

a configuration (program) can be made simple.

[0129] (Modification 4) Again, with the operation gestalt mentioned above, although it is made to perform the data update process concerning this invention between PC300 or a client PC 301,302, and Personal Digital Assistant 200,200', it may be made to perform the same renewal of data as the operation gestalt mentioned above with Personal Digital Assistants.

[0130] (Modification 5) Although Personal Digital Assistant 200,200' of a wrist watch mold was used, you may be except a wrist watch mold, for example, may make it use information management systems, such as PDA which has a note type personal computer and a general appearance configuration, with the operation gestalt mentioned above again.

[0131]

[Effect of the Invention] As explained above, also when the amount of data of the application data stored in a database is large according to this invention, it is possible to control that a data update process becomes complicated. Moreover, a data update process can be performed in between [any / of two or more information management systems which share the data connected to the network etc.].

[Translation done.]

* NOTICES *

JPO and INPIT are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is drawing showing the example of an outline configuration of the system by which the renewal approach of data concerning the 1st operation gestalt of this invention is applied.

[Drawing 2] It is drawing for explaining radical Motohara ** of said renewal approach of data.

[Drawing 3] It is drawing for explaining radical Motohara ** of said renewal approach of data.

[Drawing 4] It is drawing for explaining radical Motohara ** of said renewal approach of data.

[Drawing 5] It is drawing for explaining radical Motohara ** of said renewal approach of data.

[Drawing 6] It is drawing for explaining radical Motohara ** of said renewal approach of data.

[Drawing 7] It is drawing for explaining radical Motohara ** of said renewal approach of data.

[Drawing 8] It is the flow chart which shows the procedure of the distinction processing performed with PC which is processing for realizing said renewal approach of data, and is said structure-of-a-system element.

[Drawing 9] It is processing for realizing said renewal approach of data, and is the flow chart which shows the procedure of the data existence distinction processing performed with said PC.

[Drawing 10] In order to enforce said renewal approach of data, it is the flow chart which shows the processing operating sequence of the Personal Digital Assistant which are said PC and said structure-of-a-system element.

[Drawing 11] It is processing for realizing said renewal approach of data, and is the flow chart which shows the procedure of a data update process based on the received data from said Personal Digital Assistant performed by Above-shown PC.

[Drawing 12] It is drawing for explaining the trouble generated when the number of the fields which can be contained in the item which is unit data which said PC and said Personal Digital Assistant treat differs.

[Drawing 13] It is drawing for explaining the art by said renewal approach of data in case the number of the fields which can be contained in the item which is unit data which said PC and said Personal Digital Assistant treat differs.

[Drawing 14] It is drawing for explaining the trouble generated by the difference in the maximum data size of the field of said item which said PC and said Personal Digital Assistant treat.

[Drawing 15] It is processing for realizing said renewal approach of data, and is drawing for explaining the candidate for detection of the processing concerned in the processing which detects said item edited with said PC.

[Drawing 16] It is processing for realizing said renewal approach of data, and is the flow chart which shows the procedure of processing of transmitting the edited data which are performed with said PC.

[Drawing 17] It is drawing showing the example of an outline configuration of the system by which the renewal approach of data concerning the 2nd operation gestalt of this invention is applied.

[Drawing 18] It is drawing for explaining the principle of said renewal approach of data concerning the 2nd operation gestalt.

[Drawing 19] It is drawing for explaining the principle of said renewal approach of data concerning the 2nd operation gestalt.

[Drawing 20] In order to enforce said renewal approach of data concerning the 2nd operation gestalt, it is the flow chart which shows the processing operating sequence of the Personal Digital Assistant which are the client PC which is said structure-of-a-system element, and said structure-of-a-system

element.

[Drawing 21] It is drawing for explaining the principle of said renewal approach of data concerning the 2nd operation gestalt.

[Drawing 22] It is drawing showing the example of a functional configuration for realizing said renewal approach of data concerning an operation gestalt.

[Description of Notations]

60 the synchro engine section and 61 .. the 1st application section and 62 .. the 2nd application section and 63 .. the 3rd application section, and 61a, 62a and 63a .. the interface section and 100 .. a station and 200 .. a Personal Digital Assistant and 200' .. a Personal Digital Assistant and 200a .. a terminal database and 200b .. a terminal database, 300 ..PC, and 301 -- .. -- Client PC and 302 .. -- Clients PC and SP .. a synchro profile and NS .. a network system and NSa .. a database

[Translation done.]

* NOTICES *

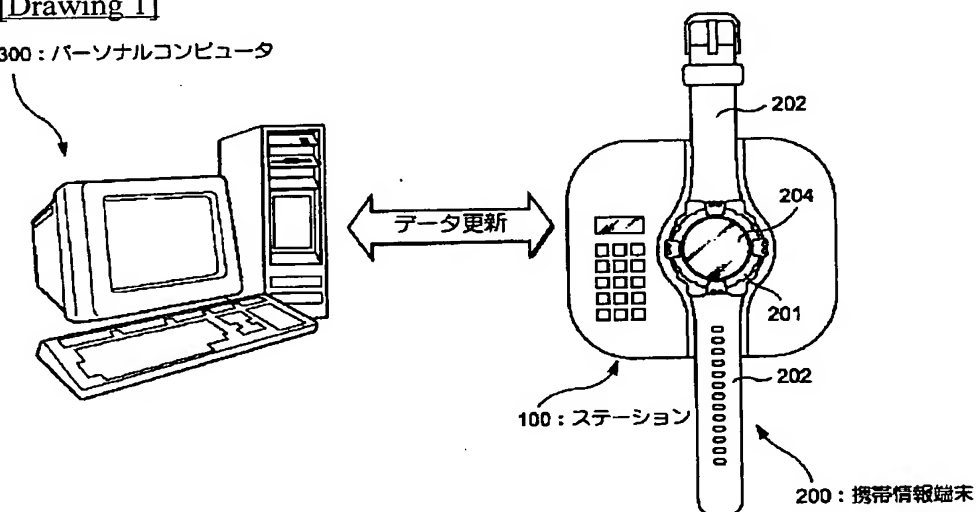
JPO and INPIT are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

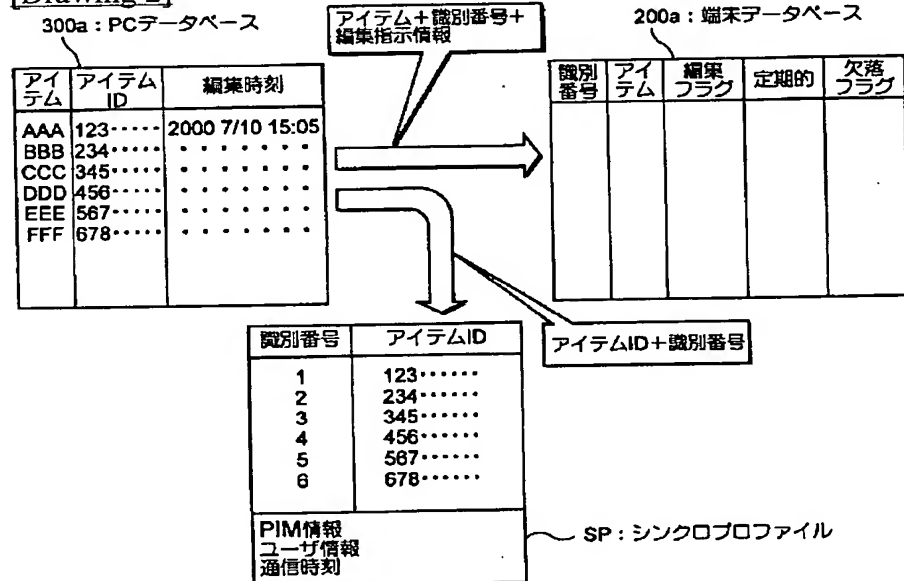
DRAWINGS

[Drawing 1]

300 : パーソナルコンピュータ



[Drawing 2]



[Drawing 3]

300a: PCデータベース

アイテム	アイテムID	編集時刻
AAA	123.....	2000 7/10 15:05
BBB	234.....	.....
CCC	345.....	.....
DDD	456.....	.....
EEE	567.....	.....
FFF	678.....	.....

200a: 端末データベース

識別番号	アイテム	編集フラグ	定期的	欠落フラグ
1	AAA	NONE	FALSE	FALSE
2	BBB	NONE	FALSE	FALSE
3	CCC	NONE	FALSE	FALSE
4	DDD	NONE	FALSE	FALSE
5	EEE	NONE	FALSE	FALSE
6	FFF	NONE	FALSE	FALSE

識別番号	アイテムID
1	123.....
2	234.....
3	345.....
4	456.....
5	567.....
6	678.....

PIM情報

ユーザ情報

通信時刻

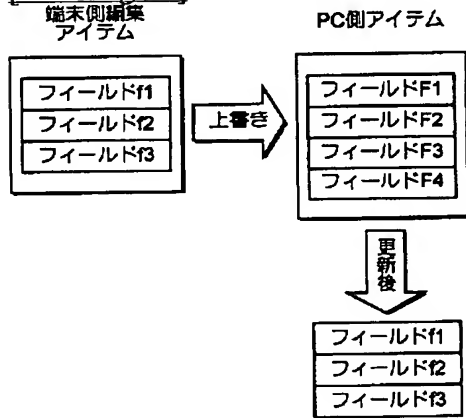
.....

.....

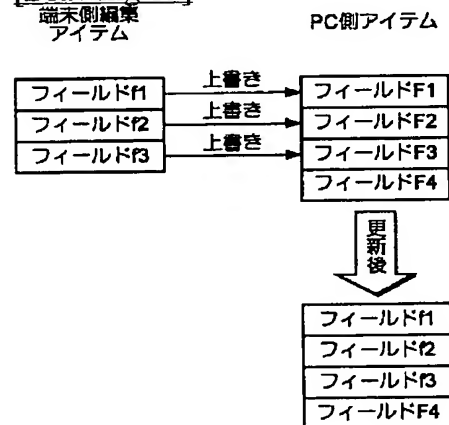
2000 7/12 10:05

SP: シンクロプロファイル

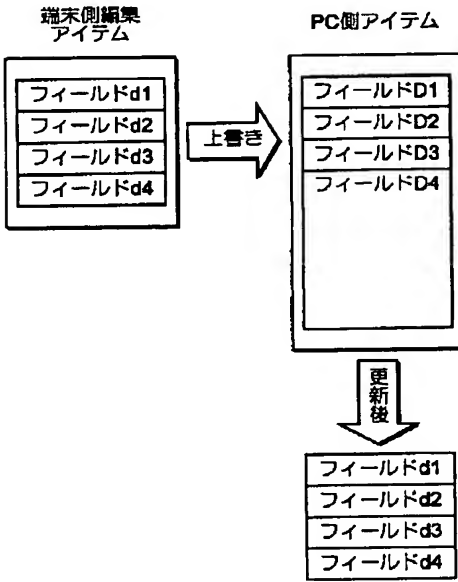
[Drawing 12]



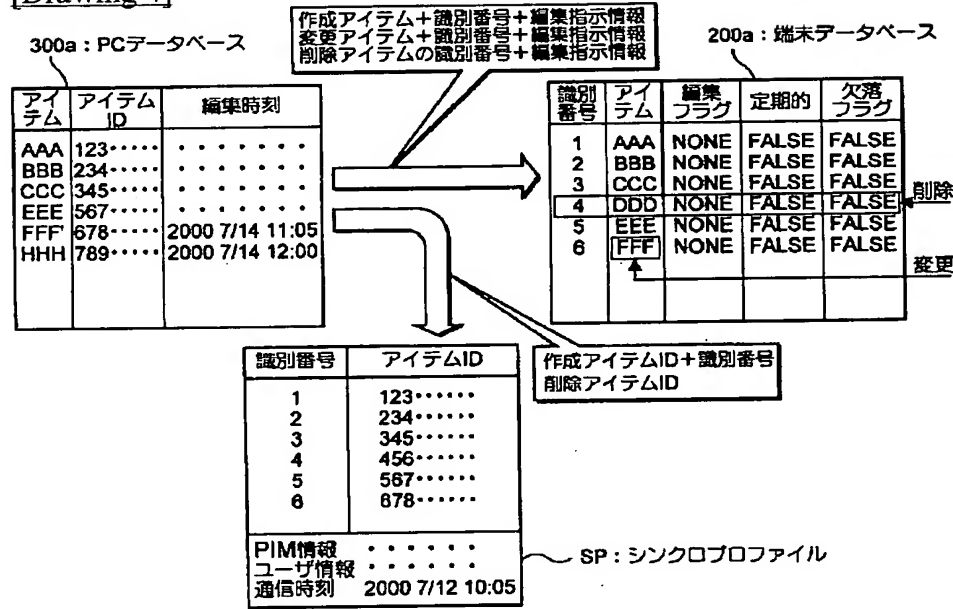
[Drawing 13]



[Drawing 14]



[Drawing 4]



[Drawing 5]

300a: PCデータベース

アイテム	アイテムID	編集時刻
AAA	123.....	.....
BBB	234.....	.....
CCC	345.....	.....
EEE	567.....	.....
FFF	678.....	2000 7/14 11:05
HHH	789.....	2000 7/14 12:00

200a: 端末データベース

識別番号	アイテム	編集フラグ	定期的	欠落フラグ
1	AAA	NONE	FALSE	FALSE
2	BBB	NONE	FALSE	FALSE
3	CCC	NONE	FALSE	FALSE
5	EEE	NONE	FALSE	FALSE
6	FFF	NONE	FALSE	FALSE
7	HHH	NONE	FALSE	FALSE

識別番号	アイテムID
1	123.....
2	234.....
3	345.....
4	456.....
5	567.....
6	678.....
PIM情報	
ユーザ情報	
通信時刻 2000 7/16 11:00	

SP: シンクロプロファイル

[Drawing 6]

300a: PCデータベース

アイテム	アイテムID	編集時刻
AAA	123.....	.....
BBB	234.....	.....
CCC	345.....	.....
DDD	456.....	.....
EEE	567.....	.....
FFF	678.....	.....

変更
削除

作成アイテム+識別番号+編集フラグ情報
 変更アイテム+識別番号+編集フラグ情報
 削除アイテムの識別番号+編集フラグ情報

200a: 端末データベース

識別番号	アイテム	編集フラグ	定期的	欠落フラグ
1	AAA	変更	FALSE	FALSE
2	BBB	NONE	FALSE	FALSE
3	CCC	削除	FALSE	FALSE
4	DDD	NONE	FALSE	FALSE
5	EEE	NONE	FALSE	FALSE
6	FFF	NONE	FALSE	FALSE
0	GGG	新規作成	FALSE	FALSE

識別番号	アイテムID
1	123.....
2	234.....
3	345.....
4	456.....
5	567.....
6	678.....
PIM情報	
ユーザ情報	
通信時刻	

作成アイテム+識別番号

作成アイテムID+識別番号
削除アイテムID

SP: シンクロプロファイル

[Drawing 7]

300a: PCデータベース

アイテム	アイテムID	編集時刻
AAA'	123.....	.....
BBB	234.....	.....
DDD	456.....	.....
EEE	567.....	.....
FFF	678.....	.....
GGG	890.....	.....

200a: 端末データベース

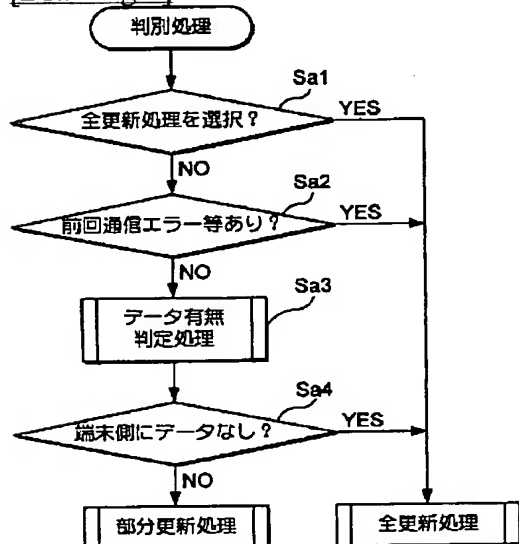
識別番号	アイテム	編集フラグ	定期的	欠落フラグ
1	AAA'	NONE	FALSE	FALSE
2	BBB	NONE	FALSE	FALSE
4	DDD	NONE	FALSE	FALSE
5	EEE	NONE	FALSE	FALSE
6	FFF	NONE	FALSE	FALSE
8	GGG	NONE	FALSE	FALSE

識別番号	アイテムID
1	123.....
2	234.....
4	456.....
5	567.....
6	678.....
8	890.....

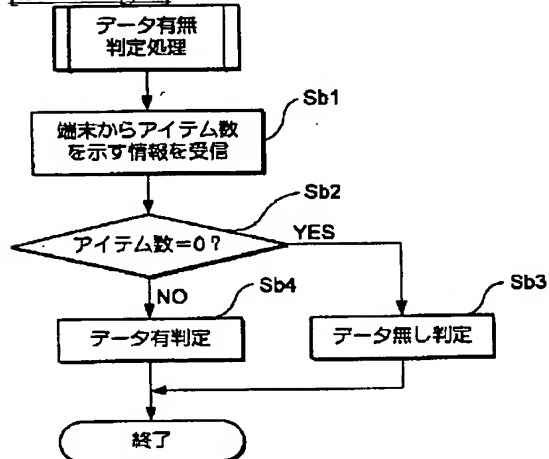
PIM情報
ユーザ情報
通信時刻

SP: シンクロプロファイル

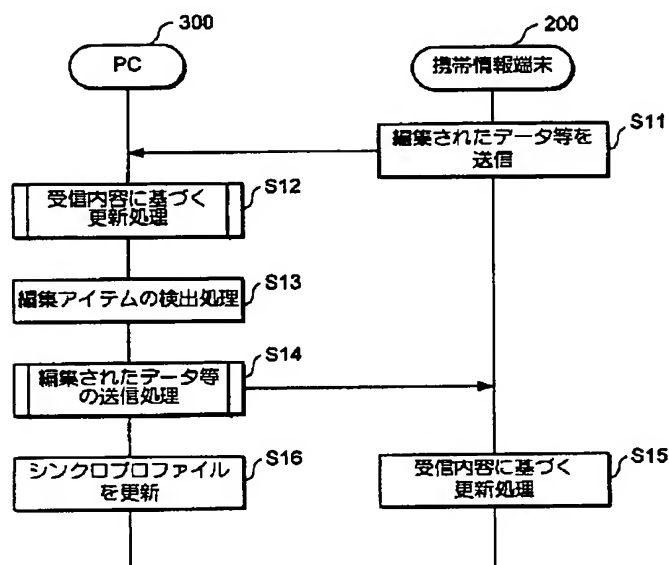
[Drawing 8]



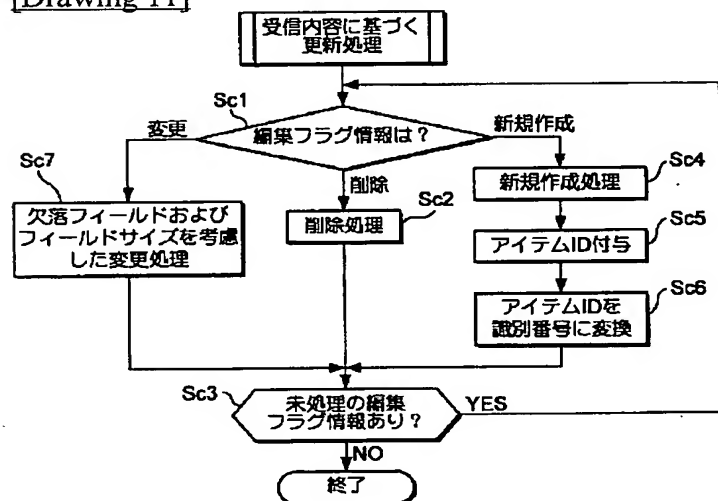
[Drawing 9]



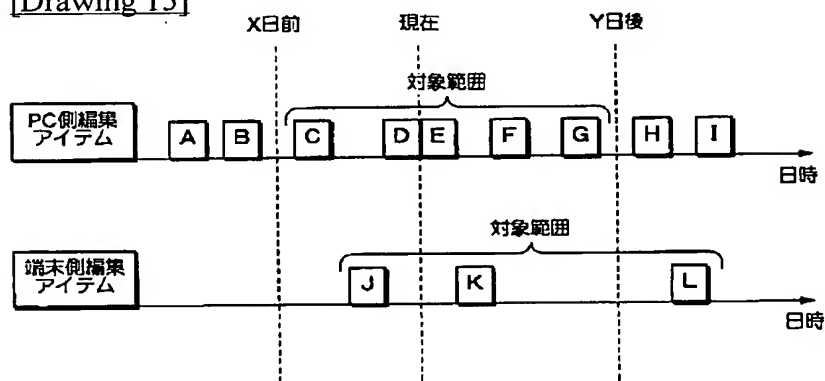
[Drawing 10]



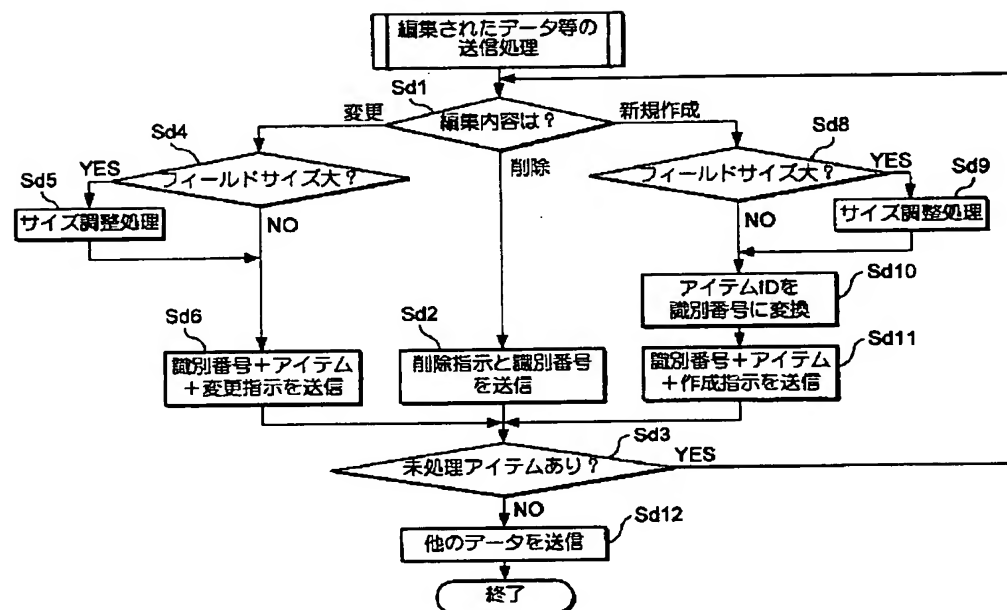
[Drawing 11]



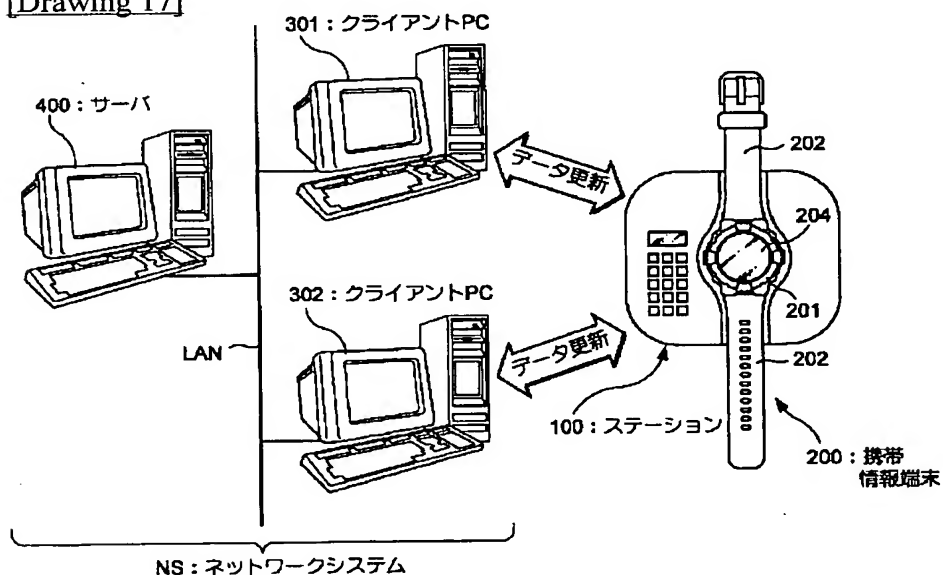
[Drawing 15]



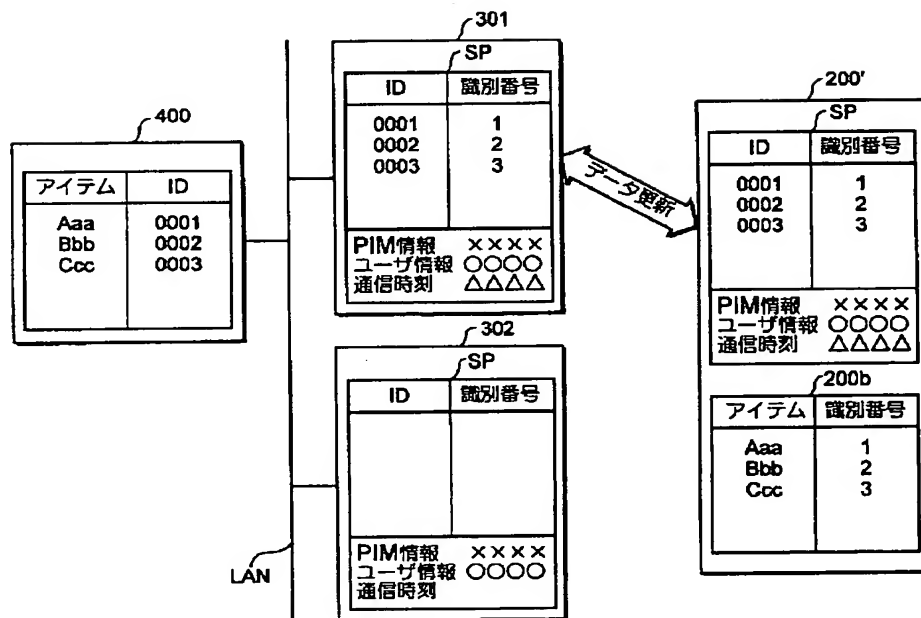
[Drawing 16]



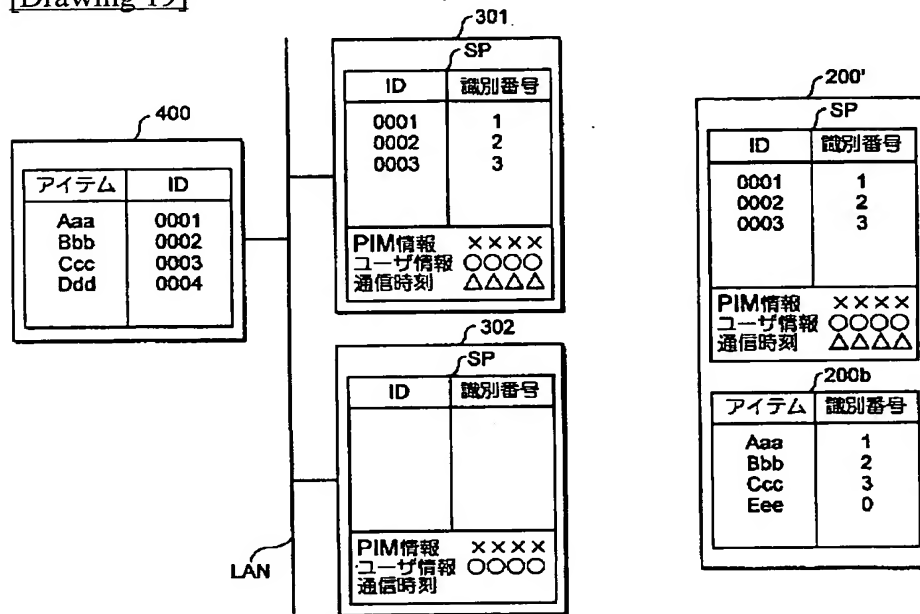
[Drawing 17]



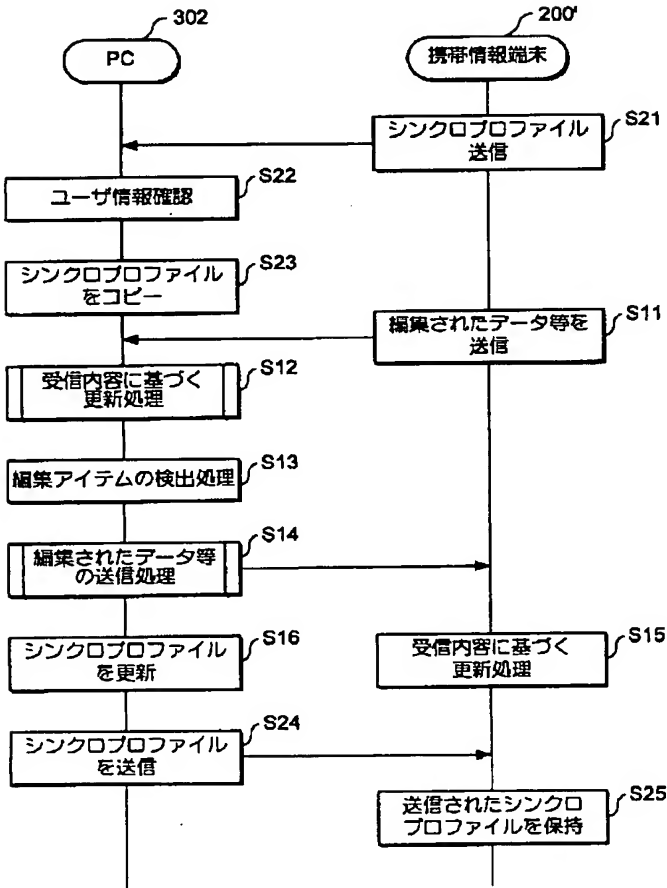
[Drawing 18]



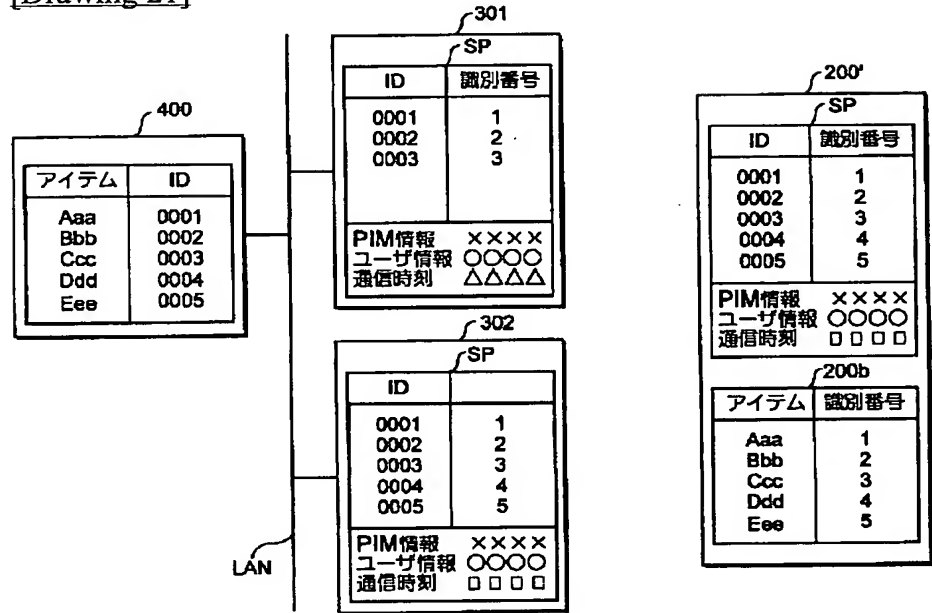
[Drawing 19]



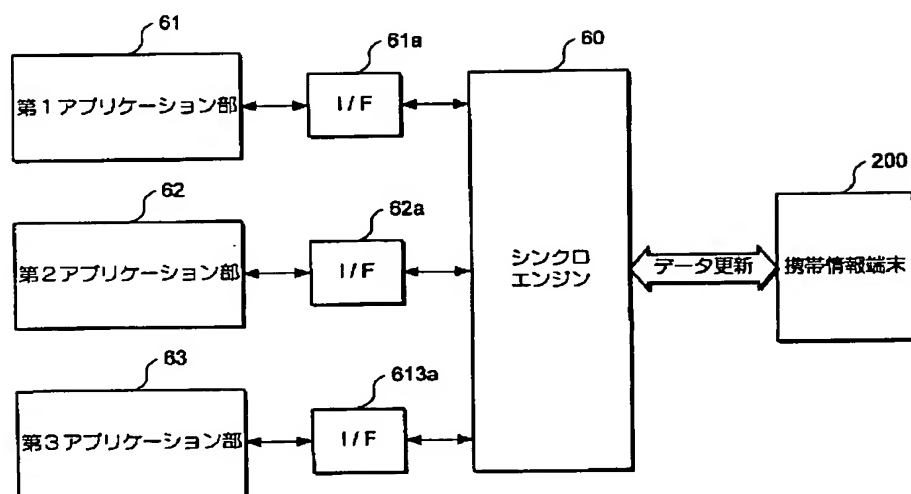
[Drawing 20]



[Drawing 21]



[Drawing 22]



[Translation done.]